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DOCUMENTATION OF THE 1975-1984 MARINE MAMMAL BRIDGE LOG RECORD DATA: PORPOISE DATA MANAGEMENT SYSTEM

By

Charles W. Oliver

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Documentation of the 1975-1984 Marine Mammal Bridge Log Record Data: Porpoise Data Management System

Charles W. Oliver

Southwest Fisheries Science Center
National Marine Fisheries Service
La Jolla, California 92038

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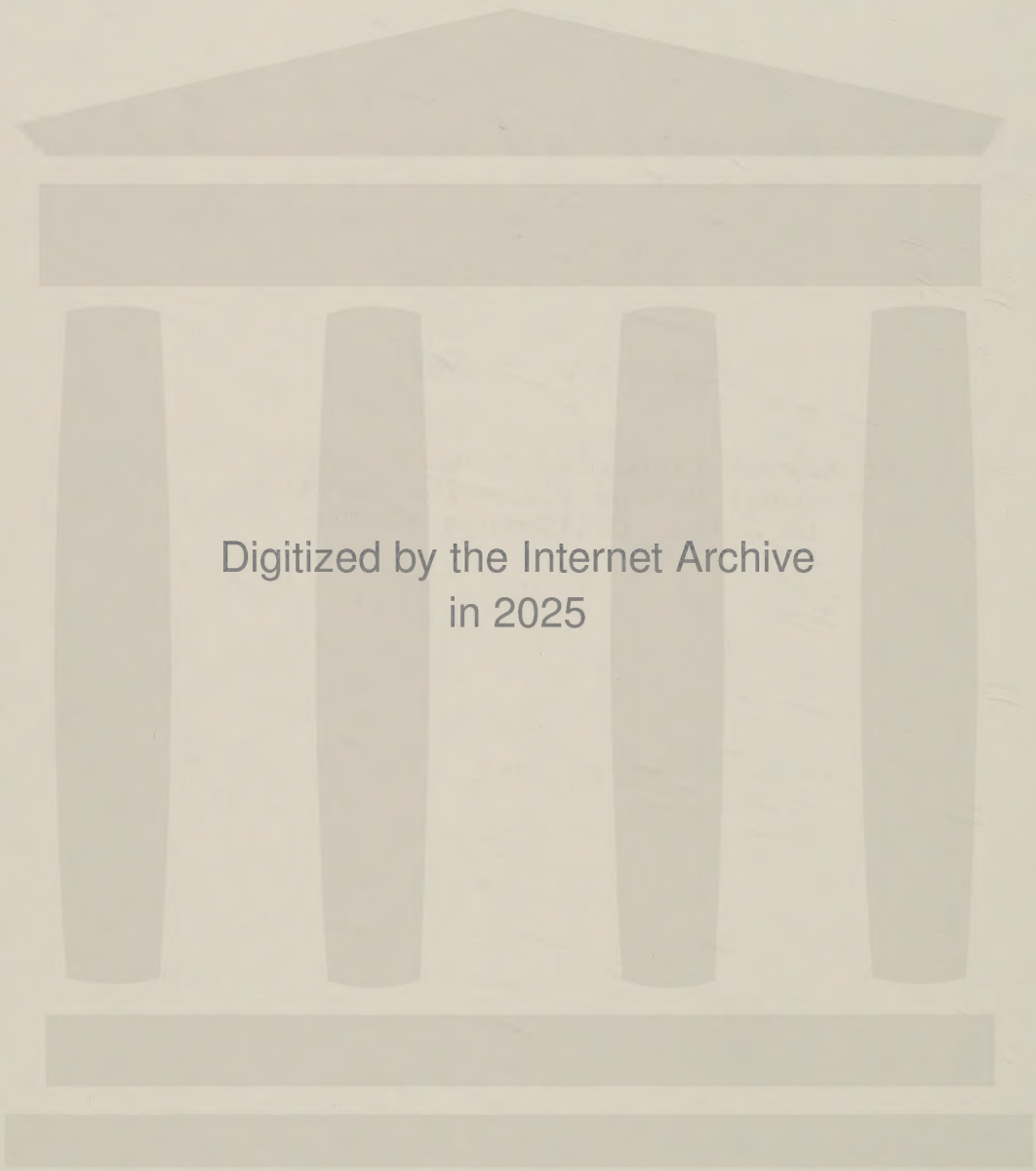

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TABLE OF CONTENTS

PAGE

Introduction 1

Data collection, quality control, and archival 2

Trip classifications 4

Points to ponder 4

Acknowledgements 8

References 8

Appendix 1. Coding definitions and instructions for the 1975-1976 Marine Mammal Bridge Log Record 29

Instructions 29
Coding format 36
Marine mammal assistance codes 42

Appendix 2. Coding definitions and instructions for the 1977-1984 Marine Mammal Bridge Log 55

Instructions 55
Coding format 57

Appendix 3. Coding definitions and instructions for the Marine Mammal Bridge Log Trip Classifications . 73

Instructions 73
Coding format 77

Appendix 4. List of Certificate Holders and Certificate Numbers, by year, for certificated operators during 1976-1982..... 79

Appendix 5. List of Certificate Holders and Certificate Number identifying the vessel code (CODE TABLE 3) and NMFS cruise number (CODE TABLE 1) for the period 1976-1982..... 87

LIST OF FIGURES

Page

Figure 1. The 1975-1976 Marine Mammal Bridge Log data collection form 23

Figure 2. The 1977-1984 Marine Mammal Bridge Log data collection form 25

Figure 3. Map of the Inter-American Tropical Tuna Commission's Yellowfin tuna Regulatory Area in 1962 (CYRA) 27

LIST OF TABLES

Page

Table 1. Index of the data collection forms, data verification values, logical error criteria, and data dictionaries, for the Bridge Log Record 1975-1984, as listed in this report 9

Table 2. Computer archival format and the frequency of non-blank values, by variables, for the 1975 and 1976 Bridge Log data 10

Table 3. Computer archival format and the frequency of non-blank values, by variables, for the 1977-1984 Bridge Log data 11

Table 4. Data verification specifications for 1975-1976 .. 13

Table 5. Data verification specifications for 1977-1984 .. 14

Table 6. Logical error criteria for 1975-1976 data 16

Table 7. Logical error criteria for 1977-1984 data 18

Documentation of the 1975-1984 Marine Mammal Bridge Log Record Data: Porpoise Data Management System

Charles W. Oliver

Southwest Fisheries Science Center
National Marine Fisheries Service
La Jolla, California 92038

INTRODUCTION

Data on the incidental kill of dolphins in the purse-seine fishery for tuna in the eastern tropical Pacific have been collected since at least 1966 (Perrin 1969). In late 1971, the National Marine Fisheries Service (NMFS) began fielding observers aboard U.S. vessels specifically to gather research data on this problem. With the passage of the Marine Mammal Protection Act (MMPA) in 1972, NMFS increased the level of data collection for this fishery, with over one hundred and twenty fishing trips observed during 1977.

Prior to 1975, NMFS observers were the sole source of dolphin mortality information from the fishery. Observers were allowed aboard the U.S. vessels with the cooperation of the owners and crews to collect data for scientific purposes. No regulatory or enforcement action, under the MMPA, could result from these observations. As of January 1, 1975, observers were required to collect additional information on the fishery which could be used for regulatory or enforcement purposes. Observers recorded data on the numbers and species of dolphins seen, chased, set on, captured, and killed or injured, and data on the tons of tuna caught, on the Marine Mammal Set Log Form. Data were recorded for all marine sets of the purse-seine net, and included the date and position of the set. While the number of observed sets increased each year beginning in 1971, because more observers were fielded each year, these observed sets represented only a portion of all sets made on dolphins.

As a result of amendments to the MMPA during 1974 and in an attempt to collect data on all sets involving dolphins, vessel captains were required to obtain a numbered "Certificate of Inclusion" from the Southwest Regional Office (SWR) of NMFS, Terminal Island, California, and to provide data similar to that provided by NMFS observers for each set on dolphins. Beginning in 1975 certificate holders were required to provide information at the conclusion of each fishing trip which detailed the numbers and kinds of dolphins involved with their fishing operations.

The increased level of effort resulted in a need to automate the processing and archival of data collected by the NMFS observer program and other data resulting from amendments to the MMPA. In 1973 the Porpoise Data Management Group (PDMG) at the Southwest

Fisheries Science Center (SWFSC) was formed to meet this need. The purpose of this report is to document the Marine Mammal Bridge Log Record set of data processed by this group. Data were first collected in 1975 using the 1975-1976 Marine Mammal Bridge Log Record Form (Figure 1). The form was modified prior to the 1977 fishing season and referred to as the 1977-1984 Marine Mammal Bridge Log Record Form (Figure 2). This documentation is part of a series of reports which describe the majority of data sets collected by the marine mammal group at the SWFSC.

DATA COLLECTION, QUALITY CONTROL, AND ARCHIVAL

The SWR created the form shown in Figure 1 prior to the start of the fishing season in 1975. The SWR began issuing "certificates of inclusion" in 1975, identified by a certificate number, which permitted fishermen to set their nets on dolphins. Certificate numbers were unique to a certificate holder and valid for a calendar year. All certificate holders were required to complete the Bridge Log Form (Figure 1) and submit these forms to the SWR at the conclusion of each trip by their vessel. Completed forms were accumulated at the SWR, and sent at irregular intervals to the PDMG for processing and archival. These forms contained information on each certificated trip for a vessel regardless of the area fished, time of year, or whether or not sets were made on dolphins. These data were provided by the certificate holder (generally the vessel captain) although on vessels which carried an observer the certificate holder sometimes relied upon the observer's data to complete the form.

The PDMG developed coding instructions, coding formats, manual and computer editing criteria, and computer archival formats for these data. Each logical record is uniquely identified by TRIP NUMBER and SET NUMBER within a calendar year. Data for all sets which occurred during a vessel trip were archived in a database consisting of all trips which began during a calendar year (e.g., BL75DB.DAT for 1975 trips). All data for a trip which made sets in more than one year were archived in the calendar year database for the year in which the trip began. TRIP NUMBERS were assigned sequentially as the forms were received and processed by the PDMG. Set numbers were taken from the forms as written by the certificate holder, or assigned sequentially by the PDMG if missing. Generally, data were provided only for sets which involved dolphins. In some cases, certificate holders sequentially number (beginning with 1) all dolphin-sets while others sequentially numbered all sets. Thus, the number of sets and the actual SET NUMBER do not necessarily correspond.

Additional data requirements, and further refinement, resulted in the creation of the 1977-1984 form (Figure 2) during 1977. The PDMG developed new coding instructions, coding formats, manual computer editing criteria, and computer archival formats for these data. Logical records were still identified by a TRIP NUMBER and SET NUMBER, and data were archived by calendar year

based upon the year in which a TRIP began. As before, all data from a trip that made sets in more than one year were archived in the calendar year database for the year in which the trip began. During all years, Bridge Log forms were infrequently received for trips which did not make any sets, and for trips which did not report any sets on dolphins. The PDMG coded a single logical record for these trips using the SET NUMBER equal to "000" to identify these trips.

Data were transcribed, coded, keypunched, and then entered onto a computer. The computer files, consisting of the data from one or more vessel trips, were then used as input to computer edit programs which identified potential errors in the data. These programs ascertain if 1) variable values were greater than, or less than, an acceptable criteria (Range checks), 2) variable values were missing when they should be present (Blank checks), and 3) combinations of the values of variables did not meet some criteria (Logical Error checks). The first attempt at editing these data with the aid of a computer produced the FORTRAN program NEWEDITOR.FOR. The PDMG subsequently developed a series of procedures and programs to edit a variety of data. The programs specific to these data were referred to as "Bridge Log Edit Programs" and were written in FORTRAN. Separate edit programs were developed for each calendar year (e.g., BLEDIT77.EXE for calendar year 1977 data), although in most years they performed essentially the same editing criteria.

I use the term "errors" to include data that is incorrect (e.g., month values greater than 12), but also to identify potential problems. These latter "errors" are not necessarily incorrect data, but when identified, caused the data editors to review the both the original and coded data. The "error" criteria was defined by researchers, the SWR, and the PDMG based upon their experience with these data sources. Data editors then investigated the errors using the original data submitted by the certificate holder, the coded data sheet, a listing of the computer file, the output from the computer edit program, and the data editors instructions, coding format, etc. Corrections were made, if necessary, and the cycle repeated until the data editor determined the data were acceptable based upon the established quality control criteria. The data were then archived and available for use by researchers.

Bridge Log data were collected during 1975-1984 on two forms and there were separate quality control procedures for each form. Table 1 references by calendar year, the forms, NMFS CRUISE NUMBERS, TRIP NUMBERS, and quality control criteria applicable to these data. The data provided by certificate holders during 1975-1976 were ultimately coded and archived in the computer format shown in Table 2. Data from the period 1977-1984 were archived in the format shown in Table 3. There are ten calendar year databases (e.g., BL75DB.DAT, BL84DB.DAT) containing a total of 44,843 logical records. Most of these logical records represent sets on marine mammal made by certificated vessels within the eastern tropical Pacific (ETP), but they also represent trips and

sets made during certificated trips outside the ETP, or trips which did not make any sets on marine mammals.

The range and blank criteria performed on the 1975-1976 data are shown in Table 4, and for data collected in 1977-1984, in Table 5. Logical error criteria are shown in Table 6 and Table 7 for the 1975-1976 and 1977-1984 data, respectively. The coding instructions, variable definitions and codes, and processing instructions for data collected during 1975-1976 are shown in Appendix 1, and for data collected during 1977-1984, in Appendix 2.

TRIP CLASSIFICATIONS

Bridge Log forms were provided, completed, and archived for vessel trips which fished outside of the IATTC's Yellowfin Regulatory Area (CYRA in effect until 1979), off Africa, and in the Caribbean as well as those trips that fished within the CYRA. Fishing for yellowfin tuna was prohibited within the CYRA (Figure 3) once a quota on tons of yellowfin tuna was reached. Trips were referred to as fishing inside or outside of the CYRA, and regulated or unregulated in regards to whether or not the tuna quota was in effect. In response to a need to further classify trips for analysis purposes, a Trip Classification database (TRIPDB.DAT) was established by researchers as the SWFSC in 1978. The coding instructions, procedures, and coding format for this second, associated database are shown in Appendix 3. This database was created, maintained, and utilized by researchers at the SWFSC and was incorporated into the PDMG system when the original researchers left the SWFSC. A computer edit program was never requested, nor developed, for this database by the researchers.

POINTS TO PONDER

I have included some comments about certain aspects of the data collection and archival which may be useful to others who choose to access the Bridge Log databases. While my comments are by no means all inclusive, they are included because of my experience with past analyses of these data and the decisions made by the PDMG concerning how the data were edited and archived in a computer format.

Prior to a workshop held at the SWFSC in 1979 on the status of the porpoise populations (Staff 1979) analyses were performed on 1975-1978 Bridge Log Record data, with the aid of the Trip Classification database, to ascertain the applicability of these data to estimating the incidental mortality of marine mammals in the fishery (Lo et al. 1979, Powers 1979). Previous estimates of mortality were obtained from the observer sample of certificated vessel trips, which is a subset of all the certificated trips

included in the Bridge Log Record database (Lo et al. 1982). The initial analyses of the 1975-1976 Bridge Log data indicated that observed vessels reported a dolphin kill-rate approximately 3.5 times that reported by unobserved vessels (Lo et al. 1979), although there was no statistical difference between the number of reported marine mammal sets or tuna catch. Because a differential in kill could introduce bias into estimates of total mortality (Powers 1979), analyses into a possible "observer effect" were initiated. Smith (1983) discusses the results of some of these analyses, including data obtained by a crew member who recorded dolphin mortality during a single vessel trip in 1979 (Croom 1980). Whalen and Smith (1985) report that estimates of total dolphin mortality would be biased downward if an "observer effect" resulted in differential kills reported by observed versus unobserved vessels.

For vessels which carried a NMFS observer, and where the certificate holder submitted a completed Bridge Log Form, comparisons are possible between these two data sources (NMFS Set Log versus NMFS Bridge Log). However, such a comparison will require identification of a CRUISE NUMBER (Set Log data) with the corresponding set identified by TRIP NUMBER (Bridge Log data). They are not the same number. The PDMG added a variable to the Bridge Log database (NMFS CRUISE NUMBER) and identified the NMFS CRUISE NUMBER which corresponds to the TRIP NUMBER for all observed sets. Set numbers will not necessarily correspond between the Bridge Log and Set Log databases, because these values are recorded by different persons (certificate holders versus NMFS observers).

Data were collected by NMFS observers on the Marine Mammal Set Log Record during 1975-1984, and similar data were collected by IATTC observers during 1979-1984 on another form. Logical records in both of these databases are identified by a CRUISE NUMBER and SET NUMBER, although NMFS and IATTC assign CRUISE NUMBERS differently. NMFS and IATTC CRUISE NUMBERS are assigned prior to a vessel's departure, and are unique. All sets during a cruise are numbered sequentially beginning with set number one. Any comparisons between NMFS Bridge Log data and IATTC collected Set Log data would require matching logical records (sets) in the NMFS Bridge Log database (TRIP NUMBER) with the corresponding logical records (sets) in the IATTC database (CRUISE NUMBER).

Forms were received by the PDMG for certificated trips which did not make any sets, and for trips which did not make any sets on dolphins. The PDMG coded a single logical record for both types of trips and used the SET NUMBER "000" to identify these trips. SET NUMBERS greater than zero identify a set that involved marine mammals, whether intentionally or not. Users can access the TRIP CLASSIFICATION database and the Bridge Log variable SET NUMBER to select records for analysis.

The data verification criteria used in the the editing process (range, blank, and logical-errors) are generally not absolute. We use the term "errors" to include data that is incorrect (e.g.,

month values greater than 12), but also to identify potential problems. These latter "errors" are not necessarily incorrect data, but when identified, cause the data editors to review the both the original and coded data. The "error" criteria were defined by researchers, the SWR, and the PDMG based upon their experience with these data. Potential "errors" were identified if variable values were beyond what the PDMG considered to be "normal" values.

For some variables the editing criteria were inviolate (e.g., the value of the YEAR variable must be 75 for data collected during 1975). Values beyond the established range or blank criteria are not necessarily in error. Thus, a value for the variable TOTAL PORPOISE KILLED which exceeds the established criteria of 100 animals used during 1975-1984 may be valid, although the edit criteria would cause the data editors to review the original data to verify the entry. Thus, a user should not assume that values will always be within the range or blank criteria, although for most records this will be the case. In contrast, logical-error criteria are generally inviolate, except for cases where data were not recorded.

Researchers are often interested in knowing if a variable was not collected on a particular logical record although the occurrence of "missing data" may, or may not, affect the analysis. Variables for which a zero value has meaning present a special problem (e.g., Latitude Degrees, Total Number of Dolphins Killed). The PDMG used "-1" or "9" to identify "missing data" for variables (9 for single byte variables, and -1 for multi-byte variables) during the early 1970s because the FORTRAN compiler used to access these data interpreted both blank and zero values as zeroes for numeric variables. Observers and data editors were thus required to enter these "missing data" values for each variable, and this requirement increased the physical size of the computer files. Beginning in late 1974, the PDMG began archiving data on a computer system provided by Computer Sciences Corporation. The data management languages used on this computer system (DML and ALADIN) allowed unrecorded numeric variables (blanks) to be stored as "null or less than zero" with a considerable reduction in the physical size of the computer files. The PDMG group instructed observers and data editors to not code variables for which a value was "missing", and transcribed existing "-1" and "9" values to blanks. Thus, a researcher could test a numeric variable for a "less than zero" value to determine if the value was recorded. The reasons we took advantage of this capability were to reduce the amount of data entry, reduce the size of the computer files, and to make it easier to review the data while retaining the ability to identify "missing data" during editing and analysis.

In 1981, the PDMG was instructed to transfer the archived data to another computer system which did not easily support a "null" capability. A decision was made not to transcribe the existing "missing data" values (blanks) to a "-1" or "9" value. Thus, a researcher must now interpret the character representation of a

variable (blank value), and not a numeric representation (blank and zero the same) if a "missing data" value is important to the analysis.

The computer programs used to identify range, blank, and logical "errors" also updated a database used to count the frequencies with which errors occurred each time the program was executed. This "Error Count Database" provided some insight to the database variables. The PDMG used these frequencies to identify variables which 1) might have range criteria that were too stringent or too loose, 2) required better definitions or more explicit codes, 3) required more emphasis during observer training, and 4) may pose problems during analysis. The error count databases (e.g., EC79DB for 1979 data) are archived at the SWFSC.

The PDMG has maintains a series of code tables that are an integral part of the porpoise data management system. There are 16 code tables referred to as "Porpoise CODE TABLE 1", or "Porpoise CODE TABLE 10". Code tables 1-4 and 15 are amended each year, while code tables 5-14 and 16 have had few changes since the early 1980's. Other codes are described in the coding instructions for a particular data collection form.

A variety of lists were provided by the SWR (List of Certificate holders and Certificate numbers), developed by the PDMG (Marine Mammal Assistance Codes), or developed by researchers analyzing the Bridge Log data (Trip Classification List 1, Trip Classification List 2). These lists were used to transcribe, code, and analyze the Bridge Log data. Marine Mammal Assistance Codes used by the PDMG during 1975-1976 are included with the coding instructions for Bridge Log data collected in 1975-1976 (Appendix 1). Appendices 4 and 5 provide the documented lists of Certificate Holders and Certificate Numbers for the period 1976-1982. Certificate Holders and Certificate numbers for 1983 and 1984 are available at the SWFSC but have not been archived onto a computer. The definitions and location of the Trip Classification Lists (1 and 2) are unknown to the author.

Acknowledgements

A great many people were involved with the various aspects of developing and maintaining the data management system and these data. I thank Robert Butler and Frank Ralston who assisted in the development of the data management concept and system. I thank Ken Wallace who assisted in programming the computer edits and archival procedures, and who performed the transfer of the archived data in the early 1980's. Helpful review comments were received from Al Jackson, Ken Wallace, Al Coan, and Elizabeth Edwards (SWFSC).

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Whalen, B.E. and T.D. Smith. 1985. Observer effect on incidental dolphin mortality in the eastern tropical Pacific tuna fishery. Fish Bull., U.S. 83:521-530.

Table 1. Index of the collection forms, data verification values, logical error criteria and computer format data dictionaries, for the Bridge Log Record for the period 1975-1984, as listed in this report.

Year	Collection Form Figure	NMFS CRUISE NUMBERS	BRIDGE LOG TRIP NUMBERS	Data Dictionary Table	Data Verification Criteria Table	Logical Error Criteria Table
1975	1	98-125,127-133	1-414	2	4	6
1976	1	134-167,170-206, 208-211	1-433	2	4	6
1977	1*	217-231, 235-309, 311-318,	1-16,18-25,27-33, 35-55,57,59-70, 107,109,110,113, 114,117,122,131, 143,151,160,167, 169,201,208,293	3	5	7
1977	2	320-324, 326-329, 331-332	17,26,34,56,58, 71-106,108,111-112,115,116,118-119,121,123-130, 132-142,144-150, 152-159,161-166, 168,170-200,202-207,209-213,215-292,294-300,302-304,306,308,311-325	3	5	7
1978	2	333-411,413-454	1-279	3	5	7
1979	2	455-462,465-563, 565-568	1-249	3	5	7
1980	2	569-597,600-641, 643-645,647,649-674	1-227	3	5	7
1981	2	675-686,688-715, 717-768	1-216	3	5	7
1982	2	769-797,799-800, 802-842	1-145	3	5	7
1983	2	844-851,853-873,875	1-64	3	5	7
1984	2	884,887-892,899-902	1-65	3	5	7

*Data collected during 1977 using the 1975-1976 Bridge Log Record Form, were transcribed to the 1977-1982 form and edited accordingly.

Table 2. Computer archival format and the frequency of non-blank values, by variables, for the 1975 and 1976 Bridge Log data.

ELEMENT NAME	**** COLUMNS *** FROM	TO	WIDTH	FREQUENCY OF NON-BLANK VALUES 1975	1976
Number of logical records				7,171	6,933
TRIP-AND-SET	1 -	6	6		
TRIP	1 -	3	3	7171	6933
SET	4 -	6	3	7167	6931
VESSEL-CODE	7 -	10	4	7167	6933
VESSEL-CLASS	11 -	11	1	7167	6933
CERT-3DIGITS	12 -	14	3	7128	6876
DATE	15 -	20	6		
YEAR	15 -	16	2	7171	6933
MONTH	17 -	18	2	7046	6822
DAY	19 -	20	2	7010	6783
TIME-SET-START	21 -	24	4	5959	5721
HR-SET-START	21 -	22	2		
MIN-SET-START	23 -	24	2		
POSITION	25 -	35	11		
LATITUDE	25 -	28	4		
LATD	25 -	26	2	6787	6422
LATM	27 -	28	2	6173	6083
N-OR-S	29 -	29	1	7047	6827
LONGITUDE	30 -	34	5		
LONGD	30 -	32	3	6785	6420
LONGM	33 -	34	2	6160	6081
E-OR-W	35 -	35	1	7046	6827
SWELL	36 -	37	2	1134	1381
CHOP	38 -	39	2	974	2005
WIND	40 -	41	2	4570	5438
SPECIES-COMP1	42 -	42	1	7047	6827
TOTAL-IN-SCHOOL	43 -	46	4	6394	6460
TOTAL-CAPTURED	47 -	50	4	6905	6558
TOTAL-KILLED	51 -	54	4	6962	6808
TOTAL-INJURED	55 -	58	4	6029	6164
YF-CAUGHT	59 -	61	3	7019	6790
SJ-CAUGHT	62 -	64	3	7020	6795
OTHER-CAUGHT	65 -	67	3	7024	6804
OTHER-FISH-CODE	68 -	68	1	38	42
ASSISTANCE	69 -	70	2	6626	6560
SPECIES-COMP2	71 -	72	2	20	15
NMFS-CRUISE	73 -	75	3	951	1366
FILLER	76 -	80	5	na	na

Table 3. Computer archival format and the frequency of non-blank values, by variables, for the 1977-1984 Bridge Log data.

ELEMENT NAME	**** COLUMNS *** FROM	TO	WIDTH	FREQUENCY OF NON-BLANK VALUES 1977	1978	1979	1980	1981	1982	1983	1984
Number of logical records				6626	3878	6119	4843	5267	3089	1550	1828
TRIP-AND-SET	1 -	6	6								
TRIP	1 -	3	3	6626	3878	6119	4843	5267	3089	1550	1828
SET	4 -	6	3	6620	3876	6116	4836	5262	3066	1538	1818
FILLER	7 -	7	1								
VESSEL-CODE	8 -	10	4	6626	3878	6119	4843	5267	3089	1550	1828
VESSEL-CLASS	12 -	12	1	6626	3878	6119	4843	5267	3089	1550	1828
CERT-3DIGITS	13 -	15	3	6571	3876	6059	4805	5265	3086	1550	1828
DATE	16 -	21	6								
YEAR	16 -	17	2	6599	3855	6110	4838	5266	3089	1549	1828
MONTH	18 -	19	2	6532	3820	6079	4815	5242	3061	1530	1818
DAY	20 -	21	2	6529	3815	6075	4808	5240	3060	1530	1818
TIME-SET-START	22 -	25	4	6277	3689	5718	4600	4988	2868	1357	1741
HR-SET-START	22 -	23	2								
MIN-SET-START	24 -	25	2								
POSITION	26 -	36	11								
LATITUDE	26 -	29	4								
LATD	26 -	27	2	6463	3788	5912	4702	5030	3042	1528	1817
LATM	28 -	29	2	6397	3778	5780	4655	4959	3041	1528	1817
N-OR-S	30 -	30	1	6386	3735	5905	4702	5000	3042	1528	1753
LONGITUDE	31 -	35	5								
LONGD	31 -	33	3	6460	3787	5910	4699	5029	3041	1525	1817
LONGM	34 -	35	2	6398	3775	5780	4648	4955	3041	1525	1817
E-OR-W	36 -	36	1	6468	3787	5910	4699	5028	3041	1526	1817
BEAUFORT	37 -	37	1	6131	3679	5776	4586	4924	2883	1445	1628
SWELL	38 -	39	2	6058	3658	5630	4475	4966	2848	1425	1604
SPECIES-COMP1	40 -	41	2	6534	3819	6081	4813	5241	3053	1535	1818
SPOT-SCHOOL	42 -	46	5	6207	3733	6049	4775	5208	3028	1517	1808
SPIN-SCHOOL	47 -	51	5	5838	3562	5858	4607	5099	2882	1421	1762
OTHER-SCHOOL	52 -	56	5	6203	3783	6054	4781	5211	3036	1516	1810
SPOT-CAPTURED	57 -	61	5	6261	3793	6059	4772	5181	3035	1513	1809
SPIN-CAPTURED	62 -	66	5	6227	3735	6019	4747	5145	3003	1493	1802
OTHER-CAPTURED	67 -	71	5	6257	3799	6067	4781	5222	3042	1516	1810
SPOT-KILLED	72 -	74	3	6309	3793	5959	4764	5141	2999	1461	1808
SPIN-KILLED	75 -	77	3	6322	3797	5998	4771	5129	2984	1446	1794
OTHER-KILLED	78 -	80	3	6346	3811	6077	4790	5218	3048	1518	1810
FILLER	81 -	81	1	na	na	na	na	na	na	na	na
SPOT-INJURED	82 -	83	2	6121	3740	5632	4770	4958	2685	1366	1770
SPIN-INJURED	84 -	85	2	6308	3780	5920	4776	5063	2912	1416	1774
OTHER-INJURED	86 -	87	2	6382	3799	6008	4788	5159	3036	1516	1808
YF-CAUGHT	88 -	90	3	6451	3779	6021	4798	5182	3021	1528	1816
SJ-CAUGHT	91 -	93	3	6453	3784	6028	4801	5184	3024	1529	1817
OTHER-CAUGHT	94 -	96	3	6455	3785	6030	4800	5184	3024	1530	1817
OTHER-FISH-CODE	97 -	97	1	11	1	6	1	2	0	2	0

Table 3. continued.

ELEMENT NAME	**** COLUMNS *** FROM	TO	WIDTH	FREQUENCY OF NON-BLANK VALUES 1977	1978	1979	1980	1981	1982	1983	1984
Number of logical records				6626	3878	6119	4843	5267	3089	1550	1828
BACKDOWN	98	98	1	6522	3822	6082	4812	5239	3059	1535	1818
SPEEDBOAT	99	99	1	6532	3823	6081	4813	5243	3059	1535	1818
RAFT-PRESENT	100	100	1	6532	3823	6081	4813	5243	3059	1535	1818
HAND-RESCUE	101	101	1	6532	3823	6081	4813	5243	3059	1535	1818
TOTAL-IN-SCHOOL	102	106	5	1661	6	4	16	11	3	17	8
TOTAL-CAPTURED	107	111	5	1674	6	1	16	44	3	17	8
TOTAL-KILLED	112	114	3	1678	4	2	9	21	3	16	8
TOTAL-INJURED	115	116	2	1654	0	1	9	11	3	17	8
NMFS-CRUISE	117	119	3	3220	1753	3001	2115	2140	1374	597	325
FILLER	120	154	35	na	na	na	na	na	na	na	na

Table 4. Data Verification Specifications for the 1975-1976 BRIDGE LOG RECORD

1975-1976 Bridge Log Record Form
Data Element Blankness and Range Editing Specifications

Record 1 of 1

Data Element	Columns	Character type	Blankness OK?	Range Lower	Range Upper
Year	1- 2	N	No	75*	76*
Trip Number	3- 5	N	No	1	414
Vessel Code	6- 9	N	No	67	445
Vessel Class	10	N	No	1	4
Certificate Number	11-13	N	No	1	200
Set Number	14-16	N	No	0	120
Month	17-18	N	No	1	12
Day	19-20	N	No	1	31
Time Start Set	21-24	N	Yes	530	1759
Position:					
Latitude degrees	25-26	N	No	0	23
Latitude minutes	27-28	N	Yes	0	59
N or S Hemisphere	29	N	No	1	1
Longitude degrees	30-32	N	No	80	135
Longitude minutes	33-34	N	Yes	0	59
E or W Hemisphere	35	N	No	2	2
Swell Height	36-37	N	Yes	0	10
Chop Height	38-39	N	Yes	0	6
Wind Speed	40-41	N	Yes	0	15
Species Composition of School	42	N	No	1	9
Total Porpoise Chased	43-46	N	No	50	5000
Total Porpoise Caught	47-50	N	No	0	5000
Total Porpoise Killed	51-54	N	No	0	100
Total Porpoise Injured	55-58	N	Yes	0	10
Tons Yellowfin	59-61	N	No	0	100
Tons Skipjack	62-64	N	No	0	20
Tons Other Fish	65-67	N	No	0	20
Other Fish Code	68	N	Yes	1	8
Mammal Assistance Code	69-70	N	No	1	99
Other Mammal Species Code	71-72	N	Yes	1	6
NMFS Cruise Number	73-75	N	Yes	na	na

*Each year's data were edited for that year.

A = Alpha B = Blank N = Numeric

Table 5. Data Verification Specifications for the 1977-1984 BRIDGE LOG RECORD

1977-1984 Bridge Log Record Form
Data Element Blankness and Range Editing Specifications

Record 1 of 2

Data Element	Columns	Character type	Blankness OK?	Range Lower	Range Upper
Trip Number	1- 3	N	No	1	325
Set Number	4- 6	N	No	0	120
Record Number	7	N	No	1	1
Vessel Code (1977-1982)	8-11	N	No	67	445
(1983)				67	485
(1984)				67	500
Vessel Class	12	N	No	2	3
Certificate Number	13-15	N	No	500	700
Year	16-17	N	No	77*	84*
Month	18-19	N	No	1	12
Day	20-21	N	No	1	31
Time SetStart	22-25	N	Yes	530	1859
Position:					
Latitude degrees	26-27	N	No	0	23
Latitude minutes	28-29	N	Yes	0	59
N or S Hemisphere	30	N	No	1	2
Longitude degrees	31-33	N	No	80	140
Longitude minutes	34-35	N	Yes	0	59
E or W Hemisphere	36	N	No	2	2
Beaufort Number	37	N	Yes	0	8
Swell Height	38-39	N	Yes	0	10
Species Composition of School	40-41	N	No	1	9
Spotted Porpoise Chased	42-46	N	No	0	5000
Spinner Porpoise Chased	47-51	N	No	0	5000
Other Porpoise Chased	52-56	N	No	0	5000
Spotted Porpoise Caught	57-61	N	No	0	5000
Spinner Porpoise Caught	62-66	N	No	0	5000
Other Porpoise Caught	67-71	N	No	0	5000
Spotted Porpoise Killed	72-74	N	No	0	100
Spinner Porpoise Killed	75-77	N	No	0	50
Others Porpoise Killed	78-80	N	No	0	50

*Each year's data were edited for that year.

A = Alpha B = Blank N = Numeric

Table 5. Data Verification Specifications for the 1977-1984 BRIDGE LOG RECORD (continued).

1977-1984 Bridge Log Record Form
Data Element Blankness and Range Editing Specifications

Record 2 of 2

Data Element	Columns	Character type	Blankness OK?	Range Lower	Range Upper
Trip Number	1- 3	N	No	1	325
Set Number	4- 6	N	No	0	120
Record Number	7	N	No	2	2
Spotted Porpoise Injured	8- 9	N	Yes	0	10
Spinner Porpoise Injured	10-11	N	Yes	0	10
Other Porpoise Injured	12-13	N	Yes	0	10
Tons Yellowfin	14-16	N	No	0	100
Tons Skipjack	17-19	N	No	0	20
Tons Other	20-22	N	No	0	20
Other Fish Code	23	N	Yes	1	8
Backdown ? Y/N	24	N	No	1	3
Speedboats ? Y/N	25	N	No	1	3
Raft Rescue ? Y/N	26	N	No	1	3
Hand Rescue ? Y/N	27	N	No	1	3
Total Porpoise Chased	28-32	N	Yes	50	5000
Total Porpoise Caught (1977-82)	33-37	N	Yes	1	5000
(1983-84)				0	5000
Total Porpoise Killed (1977-82)	38-40	N	Yes	1	100
(1983-84)				0	100
Total Porpoise Injured (1977-82)	41-42	N	Yes	1	10
(1983-84)				0	10
NMFS Cruise Number	43-45	N	Yes	na	na

A = Alpha B = Blank N = Numeric

Table 6. Logical Error criteria for the 1975-1976 BRIDGE LOG Record.

FOR BLEDIT76 L

ERROR001	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP THEN PRESENT SET(1.14) SHOULD BE GREATER THAN PREVIOUS SET
ERROR002	IF SET(1.14) EQUALS 0 THEN MONTH(1.17),LATITUDE(1.25), LONGITUDE(1.30),SPECIES COMP1(1.42),TOTAL CAPTURED (1.47),YF CAUGHT(1.59),SK CAUGHT(1.62) AND OTHER (1.65) SHOULD BE BLANK
ERROR003	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP THEN PRESENT VESSEL CODE(1.06) SHOULD BE EQUAL TO PREVIOUS VESSEL CODE
ERROR004	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP THEN PRESENT VESSEL CLASS(1.10) SHOULD BE EQUAL TO PREVIOUS VESSEL CLASS
ERROR005	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP THEN PRESENT CERT 3DIGITS(1.11) SHOULD BE EQUAL TO PREVIOUS CERT 3DIGITS
ERROR006	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP THEN PRESENT MONTH(1.17) SHOULD BE EQUAL TO OR GREATER THAN PREVIOUS MONTH
ERROR007	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP AND IF PRESENT MONTH(1.17) IS EQUAL TO PREVIOUS MONTH THEN PRESENT DAY(1.19) SHOULD BE EQUAL TO OR GREATER THAN PREVIOUS DAY
ERROR008	IF PRESENT TRIP(1.03) IS EQUAL TO PREVIOUS TRIP AND IF PRESENT DAY(1.19) IS EQUAL TO PREVIOUS DAY THEN PRESENT TIME SET START(1.21) SHOULD BE GREATER THAN PREVIOUS TIME SET START
ERROR009	IF SPECIES COMP1(1.42) IS NOT EQUAL TO 7 THEN SPECIES COMP2(1.71) SHOULD BE BLANK
ERROR010	IF SPECIES COMP1(1.42) IS EQUAL TO 7 THEN SPECIES COMP2 (1.71) SHOULD BE GREATER THAN 0
ERROR011	IF TOTAL CAPTURED(1.47) IS NON-BLANK AND EQUAL TO 0 THEN TOTAL KILLED(1.51), TOTAL INJURED(1.55), YF CAUGHT (1.59), SJ CAUGHT(1.62) AND OTHER CAUGHT (1.65) SHOULD BE NON-BLANK AND EQUAL TO 0
ERROR012	IF TOTAL CAPTURED(1.47) IS GREATER THAN 0 THEN TOTAL IN SCHOOL(1.43) SHOULD BE GREATER THAN 0
ERROR014	IF TOTAL KILLED(1.51) IS GREATER THAN 0 THEN TOTAL CAPTURED(1.47) SHOULD BE GREATER THAN 0
ERROR016	IF TOTAL INJURED(1.55) IS GREATER THAN 0 THEN TOTAL CAPTURED(1.47) SHOULD BE GREATER THAN 0
ERROR017	IF YF CAUGHT(1.59) IS GREATER THAN 0 THEN TOTAL CAPTURED (1.47) SHOULD BE GREATER THAN 0
ERROR018	IF SJ CAUGHT(1.62) IS GREATER THAN 0 THEN TOTAL CAPTURED (1.47) SHOULD BE GREATER THAN 0
ERROR019	IF OTHER CAUGHT(1.65) IS GREATER THAN 0 THEN TOTAL CAPTURED(1.47) SHOULD BE GREATER THAN 0 AND OTHER FISH CODE(1.68) SHOULD BE GREATER THAN 0
ERROR020	IF OTHER CAUGHT(1.65) IS NON-BLANK AND EQUAL TO 0 THEN OTHER FISH CODE(1.68) SHOULD BE BLANK

Table 6. Logical Error criteria for the 1975-1976 BRIDGE LOG Record (continued).

ERROR021	IF OTHER FISH CODE(1.68) IS BLANK THEN OTHER CAUGHT (1.65) SHOULD EQUAL 0
ERROR022	IF OTHER FISH CODE(1.68) IS GREATER THAN 0 THEN OTHER CAUGHT(1.65) SHOULD BE GREATER THAN 0
ERROR023	IF SPECIES COMP2(1.71) IS BLANK THEN SPECIES COMP1(1,42) SHOULD BE NOT EQUAL TO 7
ERROR024	IF SPECIES COMP2(1.71) IS GREATER THAN 0 THEN SPECIES COMP1(1.42) SHOULD EQUAL 7

Table 7. Logical Error criteria for the 1977-1984 BRIDGE LOG Record.

FOR BLEDIT79 L

ERROR001	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP THEN PRESENT SET(1.04) SHOULD BE GREATER THAN PREVIOUS SET
ERROR002	IF SET(1.04) EQUALS 0 THEN MONTH(1.18),LATITUDE(1.26), LONGITUDE(1.31),SPECIES COMP(1.40), SPOT CAPTURED(1.57), SPIN CAPTURED(1.62), OTHER CAPTURED(1.67),YF CAUGHT(2.14),SK CAUGHT(2.17) AND OTHER CAUGHT(2.20) SHOULD BE BLANK
ERROR003	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP THEN PRESENT VESSEL CODE(1.08) SHOULD BE EQUAL TO PREVIOUS VESSEL CODE
ERROR004	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP THEN PRESENT VESSEL CLASS(1.12) SHOULD BE EQUAL TO PREVIOUS VESSEL CLASS
ERROR005	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP THEN PRESENT CERT 3DIGITS(1.13) SHOULD BE EQUAL TO PREVIOUS CERT 3DIGITS
ERROR006	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP THEN PRESENT MONTH(1.18) SHOULD BE EQUAL TO OR GREATER THAN PREVIOUS MONTH
ERROR007	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP AND IF PRESENT MONTH(1.18) IS EQUAL TO PREVIOUS MONTH THEN PRESENT DAY(1.20) SHOULD BE EQUAL TO OR GREATER THAN PREVIOUS DAY
ERROR008	IF PRESENT TRIP(1.01) IS EQUAL TO PREVIOUS TRIP AND IF PRESENT DAY(1.20) IS EQUAL TO PREVIOUS DAY AND IF PRESENT TIME SET START IS NON-BLANK THEN PRESENT TIME SET START(1.22) SHOULD BE GREATER THAN PREVIOUS TIME SET START
ERROR009	IF SPECIES COMP1(1.40) EQUALS 1 THEN SPOT SCHOOL(1.42) SHOULD BE GREATER THAN 0, SPIN SCHOOL(1.47) SHOULD BE NON-BLANK AND EQUAL TO 0 AND OTHER SCHOOL(1.52) SHOULD BE NON-BLANK AND EQUAL TO 0
ERROR010	IF SPECIES COMP1(1.40) EQUALS 2 THEN SPOT SCHOOL(1.42) SHOULD BE NON-BLANK AND EQUAL TO 0, SPIN SCHOOL(1.47) SHOULD BE GREATER THAN 0 AND OTHER SCHOOL(1.52) SHOULD BE NON-BLANK AND EQUAL TO 0
ERROR011	IF SPECIES COMP1(1.40) EQUALS 3 THEN SPOT SCHOOL(1.42) SHOULD BE GREATER THAN 0, SPIN SCHOOL(1.47) SHOULD BE GREATER THAN 0 AND OTHER SCHOOL(1.52) SHOULD BE NON-BLANK AND EQUAL TO 0
ERROR012	IF SPECIES COMP1(1.40) EQUALS 4,5,6 OR 8 THEN SPOT SCHOOL(1.42) SHOULD BE NON-BLANK AND EQUAL TO 0, SPIN SCHOOL(1.47) SHOULD BE NON-BLANK AND EQUAL TO 0 AND OTHER SCHOOL(1.52) SHOULD BE GREATER THAN 0 SCHOOL(1.52) SHOULD BE GREATER THAN 0
ERROR014	IF SPECIES COMP1(1.40) EQUALS 9 THEN TOTAL IN SCHOOL (2.28) SHOULD BE GREATER THAN 0
ERROR016	IF SPOT SCHOOL(1.42) IS NON-BLANK AND EQUAL TO 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 2,4,5,6,7 OR 8

Table 7. Logical Error criteria for the 1977-1984 BRIDGE LOG Record (continued).

ERROR017	IF SPOT SCHOOL(1.42) IS NON-BLANK AND EQUAL TO 0 THEN SPOT CAPTURED(1.57) SHOULD BE NON-BLANK AND EQUAL SPOT KILLED(1.72) SHOULD BE NON-BLANK AND EQUAL AND SPOT INJURED(2.08) SHOULD BE NON-BLANK AND EQUAL TO 0.
ERROR018	IF SPOT SCHOOL(1.42) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,3 OR 7
ERROR020	IF SPIN SCHOOL(1.47) IS NON-BLANK AND EQUAL TO 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,4,5,6,7 OR 8
ERROR021	IF SPIN SCHOOL(1.47) IS NON-BLANK AND EQL TO 0, THEN SPIN CAPTURED(2.62) SHOULD BE NON-BLANK AND EQUAL TO 0, SPIN KILLED(1.75) SHOULD BE NON-BLANK AND EQUAL TO 0, AND SPIN INJURED(2.10) SHOULD BE NON-BLANK AND EQUAL TO 0.
ERROR022	IF SPIN SCHOOL(1.47) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 2,3 OR 7
ERROR024	IF OTHER SCHOOL(1.52) IS NON-BLANK AND EQUAL TO 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,2 OR 3
ERROR025	IF OTHER SCHOOL(1.52) IS NON-BLANK AND EQUAL TO 0 THEN OTHER CAPTURED(1.67) SHOULD BE NON-BLANK AND EQL TO 0, OTHER KILLED(1.78) SHOULD BE NON-BLANK AND EQUAL TO 0 AND OTHER INJUREDCAPTURED(2.12) SHOULD BE NON-BL TO 0
ERROR026	IF OTHER SCHOOL(1.52) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 4,5,6,7 OR 8
ERROR029	IF SPOT CAPTURED(1.57) IS NON-BLANK AND EQUAL TO 0, THEN SPOT KILLED(1.72) SHOULD BE NON-BLANK AND EQUAL TO 0, AND SPOT INJURED(2.08) SHOULD BE NON-BLANK AND EQUAL TO 0.
ERROR030	IF SPOT CAPTURED(1.57) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,3 OR 7 AND SPOT SCHOOL(1.42) SHOULD BE GREATER THAN 0.
ERROR032	IF SPIN CAPTURED(1.62) IS NON-BLANK AND EQL TO 0 THEN SPIN KILLED(1.75) SHOULD BE NON-BLANK AND EQL TO 0 AND SPIN INJURED(2.10) SHOULD BE NON-BLANK AND EQUAL TO 0
ERROR033	IF SPIN CAPTURED(1.62) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 2,3 OR 7 AND SPIN SHCOOL(1.57) SHOULD BE GREATER THAN 0.
ERROR035	IF OTHER CAPTURED(1.67) IS NON-BLANK AND EQUAL TO 0, OTHER KILLED(1.78) SHOULD BE NON-BLANK AND EQUAL TO 0, AND OTHER INJURED(2.12) SHOULD BE NON-BLANK AND EQUAL TO 0.
ERROR036	IF OTHER CAPTURED(1.67) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 4,5,6,7 OR 8 AND OTHER SCHOOL (1.52) SHOULD BE GREATER THAN 0
ERROR037	IF SPOT SCHOOL(1.42) IS NON-BLANK AND EQUAL TO 0 AND SPIN SCHOOL(1.47) IS NON-BLANK AND EQUAL TO 0 THEN OTHER SCHOOL(1.52) SHOULD BE GREATER THAN 0

Table 7. Logical Error criteria for the 1977-1984 BRIDGE LOG Record (continued).

ERROR039	IF SPOT CAPTURED(1.57) IS NON-BLANK AND EQUAL TO 0 AND SPIN CAPTURED(1.62) IS NON-BLANK AND EQUAL TO 0 AND OTHER CAPTURED(1.67) IS NON-BLANK AND EQUAL TO 0 THEN YF CAUGHT(2.14) SHOULD EQUAL 0, SK CAUGHT(2.17) SHOULD EQUAL 0 AND OTHER CAUGHT(2.20) SHOULD EQUAL 0
ERROR041	IF SPOT KILLED(1.72) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,3 OR 7, SPOT CAPTURED(1.57) SHOULD BE GREATER THAN 0 AND SPOT SCHOOL(1.42) SHOULD BE GREATER THAN 0
ERROR042	IF SPIN KILLED(1.75) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 2,3 OR 7, SPIN CAPTURED(1.62) SHOULD BE GREATER THAN 0 AND SPIN SCHOOL(1.47) SHOULD BE GREATER THAN 0
ERROR043	IF OTHER KILLED(1.78) IS GREATER THAN 0 THEN SPECIES. COMP1(1.40) SHOULD EQUAL 4,5,6,7 OR 8, OTHER CAPTURED (1.67) SHOULD BE GREATER THAN 0 AND OTHER SCHOOL(1.52) SHOULD BE GREATER THAN 0
ERROR044	IF SPOT INJURED(2.08) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 1,3 OR 7, SPOT CAPTURED(1.57) SHOULD BE GREATER THAN 0 AND SPOT SCHOOL(1.42) SHOULD BE GREATER THAN 0
ERROR045	IF SPIN INJURED(2.10) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 2,3 OR 7, SPIN CAPTURED(1.62) SHOULD BE GREATER THAN 0 AND SPIN SCHOOL(1.47) SHOULD BE GREATER THAN 0
ERROR046	IF OTHER INJURED(2.12) IS GREATER THAN 0 THEN SPECIES COMP1(1.40) SHOULD EQUAL 4,5,6,7 OR 8, OTHER CAPTURED (1.67) SHOULD BE GREATER THAN 0 AND OTHER SCHOOL(1.52) SHOULD BE GREATER THAN 0
ERROR048	IF SPOT KILLED(1.72) IS GREATER THAN 0 AND SPIN KILLED (1.75) IS GREATER THAN 0 THEN OTHER KILLED(1.78) SHOULD EQUAL 0.
ERROR050	IF YF CAUGHT(2.14) IS GREATER THAN 0 THEN SPOT CAPTURED(1.57) SHOULD BE GREATER THAN 0, OR SPIN CAPTURED(1.62) SHOULD BE GREATER THAN 0, OR OTHER CAPTURED(1.67) SHOULD BE GREATER THAN 0, OR TOTAL CAPTURED(2.33) SHOULD BE GREATER THAN 0.
ERROR051	IF SK CAUGHT(2.17) IS GREATER THAN 0 THEN SPOT CAPTURED(1.57) SHOULD BE GREATER THAN 0, OR SPIN CAPTURED(1.62) SHOULD BE GREATER THAN 0, OR OTHER CAPTURED(1.67) SHOULD BE GREATER THAN 0, OR TOTAL CAPTURED(2.33) SHOULD BE GREATER THAN 0.
ERROR052	IF OTHER CAUGHT(2.20) IS GREATER THAN 0 THEN SPOT CAPTURED(1.57) SHOULD BE GREATER THAN 0, OR SPIN CAPTURED(1.62) SHOULD BE GREATER THAN 0, OR OTHER CAPTURED(1.67) SHOULD BE GREATER THAN 0, OR TOTAL CAPTURED(2.33) SHOULD BE GREATER THAN 0
ERROR053	IF OTHER CAUGHT(2.20) IS GREATER THAN 0 THEN OTHER FISH CODE(2.23) SHOULD BE GREATER THAN 0
ERROR054	IF OTHER CAUGHT(2.20) IS NON-BLANK AND EQUAL TO 0 THEN OTHER FISH CODE(2.23) SHOULD BE BLANK

Table 7. Logical Error criteria for the 1977-1984 BRIDGE LOG Record (continued).

ERROR055	IF OTHER FISH CODE(2.23) IS BLANK THEN OTHER CAUGHT (2.20) SHOULD EQUAL 0
ERROR056	IF OTHER FISH CODE(2.23) IS GREATER THAN 0 THEN OTHER CAUGHT(2.20) SHOULD BE GREATER THAN 0
ERROR063	IF TOTAL IN SCHOOL(2.28) IS GREATER THAN 0 THEN SPOT SCHOOL(1.42), SPIN SCHOOL(1.47) AND OTHER SCHOOL(1.52) SHOULD BE BLANK AND SPECIES COMP1(1.40) SHOULD EQUAL 9
ERROR065	IF TOTAL CAPTURED(2.33) IS GREATER THAN 0 THEN SPOT CAPTURED(1.57), SPIN CAPTURED(1.62) AND OTHER CAPTURED (1.67) SHOULD BE BLANK
ERROR067	IF TOTAL KILLED(2.38) IS GREATER THAN 0 THEN SPOT KILLED(1.72), SPIN KILLED(1.75) AND OTHER KILLED(1.78) SHOULD BE BLANK
ERROR069	IF TOTAL INJURED(2.41) IS GREATER THAN 0 THEN SPOT INJURED(2.08), SPIN INJURED(2.10) AND OTHER INJURED (2.12) SHOULD BE BLANK

ENCIRCLING GEAR: YELLOWFIN TUNA PURSE SEINING CATEGORY

Report on this log all sets on porpoise or any marine mammals during each trip.

VESSEL_____ CERTIFICATE HOLDER_____ CERTIFICATE NO._____

Set No.	Date Time	Position	Sea State & Wind Vel.	NUMBER & SPECIES OF MARINE MAMMALS: Set Upon	Caught	Killed	Seriously Injured	TUNA BY SPECIES (Short Tons)	Method used to remove marine mammal from net

Reports of marine mammals killed or injured in the course of commercial fishing operation must be reported in writing to the Regional Director, National Marine Fisheries Service, 300 S. Ferry St., Terminal Island, Calif. 90731, or to an enforcement agent or other designated agent of the NMFS, at the earliest opportunity but no later than five days after such occurrence, except that if a vessel at sea returns to port later than five days after such occurrence, then it shall be reported within 48 hours after arrival in port. A copy of this log may be used to meet the above reporting requirements. Failure to report may result in revocation of the above certificate of inclusion.

Signature_____
Certificate Holder

Figure 2. THE 1977-1982 BRIDGE LOG data collection form.

SET	DATE AND TIME	POSITION	BEAUFORT #	SWELL (FT.)	MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITIES	SERIOUS INJURY	TUNA	TONS	BKDN.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
	DATE	LAT			SPOTTERS						YELLOWFIN		YES	
	TIME	LONG			SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	

NMFS-FSW34 12 77

NOAA-U.S. DEPT. OF COMMERCE

Submit the original and one copy within 48 hours after arrival in port to

NATIONAL MARINE FISHERIES SERVICE
'B' STREET PIER, ROOM 7
1140 N. HARBOR DRIVE
SAN DIEGO, CALIFORNIA 92101
Tel: (714) 293-

I THE UNDERSIGNED HEREBY DECLARE UNDER PENALTY OF PERJURY THAT THE INFORMATION SUPPLIED IN THIS LOG IS TRUE AND CORRECT.

NOTE: The vessel shall retain one copy of this log for reference.

PRINT NAME OF VESSEL

TRIP DATES

CERTIFICATE NUMBER
FSW

PRINTED NAME OF VESSEL OPERATOR

SIGNATURE OF VESSEL OPERATOR

Figure 3. Map of the Inter-American Tropical Tuna Commission's Yellowfin tuna Regulatory Area in 1962 (CYRA).

Appendix 1. Instructions to data editors for processing 1975-1976 Marine Mammal Bridge Log Data.

1975-1976 MARINE MAMMAL BRIDGE LOG DATA

Order of Procedures

1. Field forms are received from Scordino and/or Nancy Lo, being delivered to Oliver or Wallace.

2. Field forms are either placed in top left drawer (folder marked e.g. 1975 received) of Ken Wallace's desk; Room D-320, or they are to be logged in. Logging in a form consists of

    a. Assign next sequential TRIP NUMBER by blue penciling the number in upper right-hand corner of field form.

    b. Fold, punch holes and insert all sheets for cruise (Trip) into the appropriate 3-ring binder (Volume 1 for 1975 for example).

    c. Complete log in form as appropriate at the beginning of each volume.

3. When manpower is available, code new data using the 1975 Marine Mammal Bridge Log Coding Format and Usage notes. Indicate on the field forms, when you coded the data. Initial also.

4. Deliver coded forms to Ralston, Wallace or Oliver for keypunching, Rooms D318, D320 or B108.

OUTLINE OF 1975-1976 MARINE MAMMAL BRIDGE LOG PROCEDURES

I. Receiving marine mammal bridge logs from Gene Nitta, Regional Office.

   A. Assign consecutive trip numbers to each log.

II. Fill in Table 4 with:

   A. Trip No., vessel name, vessel code, vessel class, certificate holders name, certificate no., and the date the log was received.

III. Code bridge log information onto keypunch sheets using the code format given on pages

IV. Send the coded keypunch sheets to UCSD keypunch.

   A. Fill in the date bridge log was coded and sent to keypunch on Table 4.

V. Calculate and fill in Table 4 with the sum of:

   A. Total number mammals set on
   B. " " " caught
   C. " " " killed
   D. " " " injured
   E. " " TYF
   F. " " FSJ
   G. " " TOT
   H. " " Sets on mammals

VI. Place Marine Mammal Bridge Log In

   A. Three ring binder

VII. Receive keypunched cards back from UCSD keypunch.

   A. Fill in the date returned on Table 4.

VIII. Run the Edit Program on the Burroughs.

   A. Fill in the Edit run date on Table 4.

   B. Check the totals on Table 4 against the totals given on the Edit Program printout.

      1. If there is disagreement, correct the cards or your calculation?

   C. Check any variables that are flagged.

      1. Correct them if they are not legitimate.

D. After making any corrections to the cards, re-run the Edit Program and re-check the totals.

IX. When all is in agreement, place the printout in the folder labeled "Marine Mammal Bridge Log Edit Runs."

A. The (original) coding sheets are kept in the manila envelope labeled "Marine Mammal Bridge Log Coding Sheets."

X. Place finished marine mammal bridge log data cards in the appropriate card file in Data 100 Room.

INSTRUCTIONS FOR PROCESSING 1975-1976 MARINE MAMMAL BRIDGE LOGS

Introduction

Initially, only trips starting on or after January 1, 1975, in the Eastern Tropical Pacific, were coded. Later, trips in all waters, during the 1975 season, were also coded. Primarily, these included only a few African trips, which began in 1974 and continued into the 1975 season.

Occasionally, questions arise concerning legibility or completeness of the Bridge Logs. Direct these questions to Gene Nitta or Jim Morgan, at the Terminal Island Office, by phoning 8-796-2575. Questions also arise concerning validation of certificate holders. Direct these questions to Norm Mendes' office by phoning 9-293-6540.

Starting , (all) the Bridge Logs will be handled through the Regional Office located on "B" Street, San Diego, California.

General Instructions

A. After receiving the Bridge Logs, assign trip numbers to them such that they are in consecutive series with those already received for that year. Trip numbers do not reflect the dates of the trip, only the date received.

B. Using CODE TABLE 3 and Table 1 (List of Certificates of Inclusion), fill in Table 4 with:

1. Trip number and trip type (see Table 5, trip classification).
2. Vessel name
3. Vessel code (see CODE TABLE 3)
4. Vessel Class (I, II, or IV)
5. Certificate holders name
6. Certificate number
7. The date the log was received (see example Bridge Log).

If the vessel is new or there is no code for it, collaborate with the Data Editors at Extension 347 and assign a code to it.

C. Code the information from the Bridge Logs onto keypunch coding sheets according to the 1975-1976 MARINE MAMMAL BRIDGE LOG coding format.

1. Bridge Logs are only filled out if marine mammals were

encircled intentionally for the purpose of catching tuna (usually yellowfin).

2. Bridge Logs from trips in which no sets were made on marine mammals will carry no information. Bridge Logs from such a trip will require only one card to be punched with the following information:

   a. Year

   b. Trip number

   c. Vessel code

   d. Vessel class

   e. Certificate holder number

   f. Set # filled in with zeroes

3. However, if the trip included schoolfish sets in which marine mammals were involved, then treat each set as a mammal set only if marine mammals were caught, killed or injured. Schoolfish sets recorded on a Bridge Log along with marine mammal sets are ignored. No card is punched for that particular set.

4. Use either a -1 (right justified) or an "unknown" code, to indicate missing or unreadable data items.

D. After the Bridge Logs have been coded, the keypunch sheets are sent to UCSD keypunch services (Kay Dodds 9-452-2447).

1. To do so, place the keypunch coding sheets, stapled together (not more than 5-6 pages, so it will take less time to be keypunched and returned), in a large manila envelope. Label it with the proper identification (i.e., where it is going and who to return it to). This envelope is placed on the "Pick-up" shelf in the room adjacent to the workshop located by the loading dock. Keypunching usually takes one or two weeks, whereupon, the keypunch coding sheets and related punched cards are returned to the same room from which they were sent.

2. Fill in the date the Bridge Log was coded and sent to keypunch on Table 4.

   Using the log itself (not the coding sheets), calculate and fill in Table 4 with the sum of:

   a. Total number of mammals set on,

   b. Total number of mammals caught,

c. Total number of mammals killed,

d. Total number of mammals injured,

e. Total number of TYF caught,

f. Total number of TSJ caught,

g. Total number of TOT caught,

h. Total number of sets on mammals.

These totals include all marine mammals. If whale sets are included in the trip, other numbers [in brackets] are entered in the table which are the totals for porpoise sets only. If for some data items there is no bracketed number, then it means the total is the same whether whale sets are included or not. The last column ("No Mammal Sets") has in brackets, the number of porpoise sets and the set numbers of the whale set(s).

EXAMPLE

Total set on	Total captured	Total killed	Total injured	TYF	TSJ	Tons of other	# mammal sets
16,003 whales & porp. [16,000] porp only	14,000 /Porpoise only/	250	25	400 [380] 380 tons on porp	20 [0] 0 tons on porp	0	22 [20,#5,6] 20 porp sets 2 whale sets (sets #5,6)

Also, check to see if all data is given for each set. If some data is missing, enter a circled number in the appropriate column of the table indicating the total number of porpoise sets for which data is available. If data is given for all sets, no circled number is necessary.

F. After all the information has been recorded, insert the Bridge Logs and the coinciding Table 4 into a three-ring binder. Label the binder Marine Mammal Bridge Logs, Trip # to Trip # , and Year in which trips were made.

G. Received keypunch coding sheets and related punched cards from UCSD keypunch services. Fill in the date returned on Table 4.

H. Run the Edit Program on the Burroughs using the program deck as shown on page. Fill in the edit run date on Table 4.

1. Compare the totals listed on the printout sheet with those you calculated on Table 4 for each trip. If there is disagreement, correct the related cards or your calculation?

2. Check any variables that are flagged and correct them if they are not legitimate.

3. After making any corrections to the cards, re-run the edit program and re-check the totals. When the totals agree, write the date, totals okay and the initials of the editor by each trip on the printout.

I. When all is in agreement, place the printout in the folder labeled "Marine Mammal Bridge Log Edit Runs", arranged in chronological order by trip number.

1. The (original) coding sheets are kept in the manila envelope labeled "Marine Mammal Bridge Log Coding Sheets."

J. Place the corrected Marine Mammal Bridge Log Data cards in the appropriate card file in the Data 100 Room. After receiving the Landing Reports and filling out Trip Classification List #1, categorize the Marine Mammal Bridge Log Data Cards into the classifications listed in Table 5.

CODING FORMAT FOR 1975-1976 MARINE MAMMAL BRIDGE LOGS
(A Brief Description)

Variable	Column Number	Variable Description
1	1-2	Year (that trip was made in)
2	3-5	Trip number
3	6-9	Vessel code
4	10	Vessel class
5	11-13	Number of certificate of inclusion
6	14-16	Set number
7	17-18	Month
8	19-20	Day
9	21-24	Time of day
10	25-26	Latitude (degrees)
11	27-28	Latitude (minutes)
12	29	Hemisphere
13	30-32	Longitude (degrees)
14	33-34	Longitude (minutes)
15	35	Hemisphere
16	36-37	Swell height (feet)
17	38-39	Chop height (feet)
18	40-41	Wind speed (knots)
19	42	Species composition of mammal school
20	43-46	Total number of mammals set upon
21	47-50	Total number of mammals captured
22	51-54	Total number of porpoise killed
23	55-58	Total number of porpoise injured
24	59-61	Tons of yellowfin tuna caught
25	62-64	Tons of skipjack tuna caught
26	65-67	Tons of other tuna caught
27	68	Species composition of other tuna caught
28	69-70	Mammal assistance code
29	71-72	Other porpoise in school
30	73-75	NMFS cruise number

CODING FORMAT FOR 1975-1976 MARINE MAMMAL BRIDGE LOG DATA CARDS WITH EXPLANATIONS

CARD 1 OF 1 : 1975-1976 BRIDGE LOGS

Variable	Column No.	Information Coded
1	1-2	Year - In which trip began (or ended?)
2	3-5	Trip Number - Consecutive series for all vessels in a given year.
3	6-9	Vessel Code - See CODE TABLE 3. (Enter vessel class by vessel name in CODE TABLE 3.)
4	10	Vessel Class - 1, 2 or 4 (Class 3 vessels are coded as 4) Vessel class obtained from CODE TABLE 3.
5	11-13	Number of Certificate of Inclusion - Last three digits (see Table 1: List of Certificates of Inclusion).)
6	14-16	Set Number - Sets on marine mammals only (000 if all schoolfish sets). If left blank on log, then consecutively number all sets.
7	17-18	Month - If unknown, then use the following codes for quarter: Jan-March - Code 15 Apr-June - Code 25 July-Sept. - Code 35 Oct-Dec. - Code 45
8	19-20	Day - If the day is not stated but can be deduced to within 1 or 2 days, then enter the probable date. Example: Set #6 - 3/17 - 1600 hrs. , Set #7 - no date, Set #8 - 3/20 - 0700 hrs. Set #7 is probably on 3/18 or 3/19. Use one of these dates. Sometimes distances between set positions may be used in roughly determining minimum periods of time between two sets. This may aid in determining an approximate date of a set. Dates may also be obtained from observer data when available.
9	21-24	Time of Day Set Made - Local time.
10	25-26	Latitude Degrees
11	27-28	Latitude Minutes - See note under Variable 14.

CARD 1 OF 1 : 1975-1976 BRIDGE LOGS CONTINUED

Variable	Column No.	Information Coded
12	29	Hemisphere - Coded: 1 = North 2 = South 9 = Unknown (not stated)
13	30-32	Longitude Degrees
14	33-34	Longitude Minutes - If minutes are not given for either latitude or longitude (e.g. 100'N, 105'W) code as if minutes are not stated using "-1's" (actually these positions are probably just rounded off to the nearest degree). If minutes are given for either latitude or longitude but not for the other, code as if unstated minutes are "00". For example, 15'N, 105'30''W would be coded as 15001, 105302.
15	35	Hemisphere - Coded: 1 = East 2 = West 9 = Unknown
16	36-37	Swell Height - Measured in feet.
17	38-39	Chop Height - "Seas", measured in feet (see note below Variable 18).

CARD 1 OF 1 : 1975-1976 BRIDGE LOGS CONTINUED

Variable	Column No.	Information Coded
18	40-41	Wind Speed - Measured in knots.

Occasionally, force numbers (of Beaufort Scale) are used for seastate and/or wind speed. Frequently two numbers are given - take these to represent chop height and wind speed. If only one number is given, then it is arbitrarily assigned to represent wind speed. When seastate is given as calm, this is taken to be zero wind speed and zero chop height, unless otherwise stated.

Conversion table that has been used:

Force #	Wave Ht.(avg.)	Wind Speed(avg.)
0	0 feet	0 knots
1	1	2
1-2	1	4
2	2	5
2-3	3	7
3	4	9
3-4	5	11
4	5	14
4-5	6	17
5	7	19
5-6	7	22
6	8	25

(Table derived from "Appendix R, Beaufort Scale" - see attached chart).

19 42 Species Composition of mammal School -

Code 1 - Pure spotted porpoise
Code 2 - Pure spinner porpoise
Code 3 - Mixed spotted and spinner porpoise
Code 4 - Pure whitebelly porpoise (Delphinus)
Code 5 - Pure streaker porpoise (S. coeruleoalba
Code 6 - Pure Tursiops (black porpoise)
Code 7 - Other porpoise species or combinations other than spotted and spinners (see Variable 29).
Code 8 - Whale(s)
Code 9 - Unknown (no data)

20 43-46 Total Number of Mammals Set Upon - If zero is entered on log but porpoise were captured, enter a "-1" for the number set upon or captured (Variable 21) exceeds 9,999, then code it as 9,999.

Variable	Column No.	Information Coded
21	47-50	Total Number of Mammals Captured - If this number is larger than the number set upon, then just code as is. Some fishermen consider the term "captured" to mean encircled only, porpoise later diving out of the net. Using our terminology, they were not really captured. However, if a number is entered in this column, then it is coded as is.
22	51-54	Total Number of Porpoise Killed
23	55-58	Total Number of Porpoise Injured - If no porpoise were captured, and kill and injured columns are blank, enter "0s" instead of "-1s".
24	59-61	Tons of Yellowfin Caught - If number of fish is given instead of tonnage, assume 20 fish (YF) = 1/4 ton and round up to 1 ton. Less than 20 fish = 0 tons.
25	62-64	Tons of Skipjack Tuna Caught
26	65-67	Tons of Other Tuna Caught
27	68	Species Composition of Other Tuna Caught - Code 0 - N/A Code 1 - Albacore Code 2 - Black skipjack Code 3 - Bullet mackerel Code 4 - Mixed black skipjack and bullet mackerel Code 5 - Unknown (no data) or mixed YF/SK Code 6 - Bluefin tuna Code 7 - Bonito Code 8 - Bigeye tuna If species composition of tuna catch is not stated, then assume it is all yellowfin (for porpoise sets). Round up tonnages $\geq$1/4 tons. If tuna catch column on the log is left blank (whether porpoise are captured or not), enter "-1s" for yellowfin, skipjack and other tuna, with other species code 5 (unknown). If species composition is yellowfin-skipjack mixture, but no individual tonnages (or % breakdown) are given, then enter all of the catch as "other tuna" using species code 5.

CARD 1 OF 1 : 1975-1976 BRIDGE LOGS CONTINUED

Variable	Column No.	Information Coded
28	69-70	Marine Mammal Assistance Code - (see attached list).
29	71-72	Other Porpoise Species In School (Coded) -

Code 00 - N/A
Code 01 - Spotters and Tursiops
Code 02 - Spotters and spinners and Tursiops
Code 03 - Spotted and short-snouted whitebellies Lagenodelphis hosei
Code 04 - Spotters and "whitebellies"
Code 05 - Spotters and spinners and "whitebellies"
Code 06 - Spinners and whitebellies

ADDITIONAL NOTE: In some cases 2 or 3 set numbers are entered in the "set number" box and only one line of other data is given. Assume the same date and position for all sets. Enter "-1s" for all porpoise data (number set upon through seriously injured) and "9" (unknown) for species composition of school. Unless it is known that the same school (identified) was set upon. Do this for each set. Arbitrarily divide the tuna catch evenly among the sets.

30	73-75	NMFS Cruise Number - the cruise number assigned by the NMFS to this vessel trip prior to the vessels departure.

FOOTNOTES:

1. DATES/TIMES - If dates or dates/times are given in an illogical chronological order, then the edit program flags this. If dates (and positions) are very close, then leave as is. If dates are several days off and/or confusing in some way, then use "-1's".

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD

(UNGROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

01 - No assistance necessary (no animals captured).
02 - No assistance rendered (animals were captured).
03 - Backdown (Included "backup system").
04 - Porpoise basket.
05 - Crew in net (?#men).
06 - Slack bow ortza ("release net").
07 - Backdown and (?#) speedboats (?#men).
08 - Backdown and 1 speedboat (or corktender/small skiff) (?#men).
09 - Backdown and 1 speedboat (or corktender/small skiff) (1 man).
10 - Backdown and 1 speedboat (or corktender/small skiff) (2 men).
11 - Backdown and 2 speedboats (2 men).
12 - Backdown and 2 speedboats (4 men).
13 - Backdown and "by hand" (or "pull from net"/"personal assistance by crew".
14 - Backdown and crew in net (?#men).
15 - Backdown and 1 speedboat (?#men) and crew in net (?#men).
16 - Backdown and skiff (2 men).
17 - "Pull from net" or "take out by hand" or "helped over corkline by crewmen".
18 - Backdown and (?#) speedboats (2 men).
19 - Backdown and 1 speedboat (1 man) and porpoise basket.
20 - Backdown and 1 speedboat (1 man) and crew in net (?#men).
21 - Backdown and 1 speedboat (?#men) and crew in net (1 man).
22 - Backdown and 1 speedboat (?#men) and crew in net (2 men).
23 - Backdown and 1 speedboat (2 men) and crew in net (1 man).
24 - Backdown and 1 speedboat (1 man) and crew in net (2 men).
25 - Backdown and crew in net (2 men).
26 - Backdown and 2 speedboats (?#men).
27 - 1 speedboat (or small skiff) (?#men) tending net.
28 - "Release men" present.
29 - Backdown and (?#) speedboat (?#men) and crew in net (?#men).
30 - Backdown and crew in net (6 men).
31 - Backdown and crew in net (5 men).
32 - Backdown and crew in net (4 men).
33 - Backdown and 5 men assist.
34 - Backdown and 4 men assist.
35 - Backdown and 3 men assist.
36 - Crew in net (5 men) - taking porpoise out by hand.
37 - 5 men assist by hand.
38 - Backdown and 1 speedboat (?#men) and "manual assistance by crew".
39 - (?#) speedboats tending net - assisting porpoise.
40 - Backdown and 2 men assist.

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD

(UNGROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

41 - Backdown and (?#) speedboat (?#men) and crew in net (1 man).
42 - Backdown and 1 speedboat (2 men) and porpoise basket.
43 - Backdown and 1 speedboat (2 men) and crew in net (?#men).
44 - Backdown and 2 speedboats (?#men) and crew in net (?#men).
45 - Backdown and 1 speedboat (2 men) and crew in net (?#men) and porpoise basket.
46 - Backdown and (?#) speedboats (?#men) and "manual assistance by crew".
47 - 1 speedboat (1 man) tending net - pulling out porpoise.
48 - Backdown and 1 speedboat (or corktender/small skiff) (3 men).
49 - "Deck hand remove".
50 - Backdown and slack bow ortza.
51 - Two speedboats (3 men).
52 - Two speedboats (3 men) and 1 man in water.
53 - Two speedboats (3 men) and 2 men in water.
54 - Two speedboats (3 men) and 3 men in water.
55 - Two speedboats (?#men) - take out by hand.
56 - Backdown and 3 men in skiff (helping porpoise out) and 2 men in net.
57 - Backdown and skiff (?#men) and crew in net (?#men).
58 - Backdown and 3 speedboats (?#men).
59 - Backdown and 1 speedboat (?#men) and porpoise basket.
60 - Backdown and (?#men) in skiff(s).
61 - Backdown and porpoise basket.
62 - Backdown and 2 speedboats (4 men) and porpoise basket.
63 - 2 men in net.
64 - Log states "No backdown". No other assistance is stated.
65 - 3 men in net.
66 - Backdown and 2 speedboats (4 men) and crew in net (?#men).
67 - Backdown and 2 speedboats (2 men) and crew in net (?#men).
68 - Release stern ortza (ortza towed away by skiff).
69 - Backdown and 2 speedboats (?#men) and crew in net (1 man).
70 - Backdown and 2 speedboats (?#men) and crew in net (2 men).
71 - Backdown and 2 speedboats (?#men) and crew in net (3 men).
72 - Backdown and (?#) speedboats (?#men) and porpoise basket.
73 - 1 speedboats (2 men) - take out by hand.
74 - "All methods".
75 - 2 speedboats (4 men) - take out by hand.
76 - Backdown and 2 speedboats (?#men) and crew in net (?#men) and porpoise basket.
A1 - Backdown and sppedboat(s) held net open and Porpoise Apron.
A2 - Speedboat and Raft (?#men).
A3 - Spotlight and speedboat (?#men).
A4 - By hand from speedboat(s) (?#men).

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD

(UNGROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

A5 - Backdown and 2 speedboats (?#men) and rubber Raft and Bold Contender Porpoise Chute System and Shepard hook.
A6 - Backdown and 2 speedboats (?#men) and Raft (?#men) and Porpoise Apron and Bold Contender Porpoise Chute System.
A7 - 3 speedboats and 6 men hand removing.
A8 - (?#) speedboats and 3 men.
A9 - Sunk net deep (ALL PORPOISE OUT).
B1 - Backdown and (?#) speedboats (?#men) and crew in net (?#men) and spotlight.
B2 - Backdown and (?#) speedboats (?#men) and porpoise crook.
B3 - Backdown and crew in net (?#men) and speedboat by hand (?#men).
B4 - Backdown and Raft (?#men) and hand removal.
B5 - Backdown and crew in net (?#men) and hand release.
B6 - Backdown and net tender and Raft (?#men).
B7 - Backdown and crew in net (3 men).
B8 - Backdown and crew in net (8 men).

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD
(GROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

01 - No assistance necessary (no animals captured).
02 - No assistance rendered (animals were captured).
03 - Backdown (Included "backup system").
64 - Log states "No backdown". No other assistance is stated.
04 - Porpoise basket.
61 - Backdown and porpoise basket.
06 - Slack bow ortza ("release net").
50 - Backdown and slack bow ortza.
68 - Release stern ortza (ortza towed away by skiff).

SPEEDBOATS

27 - 1 speedboat (or small skiff) (?#men) tending net.
39 - (?#) speedboats tending net - assisting porpoise.
47 - 1 speedboat (1 man) tending net - pulling out porpoise.
51 - Two speedboats (3 men).
55 - Two speedboats (?#men) - take out by hand.
73 - 1 speedboats (2 men) - take out by hand.
75 - 2 speedboats (4 men) - take out by hand.

BACKDOWN AND SPEEDBOATS

08 - Backdown and 1 speedboat (or corktender/small skiff) (?#men).
09 - Backdown and 1 speedboat (or corktender/small skiff) (1 man).
10 - Backdown and 1 speedboat (or corktender/small skiff) (2 men).
48 - Backdown and 1 speedboat (or corktender/small skiff) (3 men).
07 - Backdown and (?#) speedboats (?#men).
11 - Backdown and 2 speedboats (2 men).
12 - Backdown and 2 speedboats (4 men).
18 - Backdown and (?#) speedboats (2 men).
26 - Backdown and 2 speedboats (?#men).
58 - Backdown and 3 speedboats (?#men).

BACKDOWN AND SKIFF

16 - Backdown and skiff (2 men).
60 - Backdown and (?#men) in skiff(s).

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD
(GROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

CREW IN NET

05 - Crew in net (?#men).
36 - Crew in net (5 men) - taking porpoise out by hand.
63 - 2 men in net.
65 - 3 men in net.

BACKDOWN AND CREW IN NET

14 - Backdown and crew in net (?#men).
25 - Backdown and crew in net (2 men).
30 - Backdown and crew in net (6 men).
31 - Backdown and crew in net (5 men).
32 - Backdown and crew in net (4 men).

SPEEDBOAT(S) AND CREW IN NET

52 - Two speedboats (3 men) and 1 man in water.
53 - Two speedboats (3 men) and 2 men in water.
54 - Two speedboats (3 men) and 3 men in water.

BACKDOWN AND SPEEDBOAT(S) AND CREW IN NET

15 - Backdown and 1 speedboat (?#men) and crew in net (?#men).
20 - Backdown and 1 speedboat (1 man) and crew in net (?#men).
21 - Backdown and 1 speedboat (?#men) and crew in net (1 man).
22 - Backdown and 1 speedboat (?#men) and crew in net (2 men).
23 - Backdown and 1 speedboat (2 men) and crew in net (1 man).
24 - Backdown and 1 speedboat (1 man) and crew in net (2 men).
29 - Backdown and (?#) speedboat (?#men) and crew in net (?#men).
41 - Backdown and (?#) speedboat (?#men) and crew in net (1 man).
43 - Backdown and 1 speedboat (2 men) and crew in net (?#men).
44 - Backdown and 2 speedboats (?#men) and crew in net (?#men).
66 - Backdown and 2 speedboats (4 men) and crew in net (?#men).
67 - Backdown and 2 speedboats (2 men) and crew in net (?#men).
69 - Backdown and 2 speedboats (?#men) and crew in net (1 man).
70 - Backdown and 2 speedboats (?#men) and crew in net (2 men).
71 - Backdown and 2 speedboats (?#men) and crew in net (3 men).

BACKDOWN AND SKIFF AND CREW IN NET

56 - Backdown and 3 men in skiff (helping porpoise out) and 2 men in net.
57 - Backdown and skiff (?#men) and crew in net (?#men).

MARINE MAMMAL ASSISTANCE CODES USED WITH THE
1975-1976 BRIDGE LOG RECORD
(GROUPED)

Note: (?#) means the number is unknown. In some cases plural is used so number is probably more than one. In other cases, (?#) means 1 or more.

BACKDOWN AND SPEEDBOAT(S) AND PORPOISE BASKET

19 - Backdown and 1 speedboat (1 man) and porpoise basket.
42 - Backdown and 1 speedboat (2 men) and porpoise basket.
59 - Backdown and 1 speedboat (?#men) and porpoise basket.
62 - Backdown and 2 speedboats (4 men) and porpoise basket.
72 - Backdown and (?#) speedboats (?#men) and porpoise basket.

BACKDOWN AND SPEEDBOAT(S) AND CREW IN NET AND PORPOISE BASKET

45 - Backdown and 1 speedboat (2 men) and crew in net (?#men) and porpoise basket.
76 - Backdown and 2 speedboats (?#men) and crew in net (?#men) and porpoise basket.

"MANUAL ASSISTANCE"

17 - "Pull from net" or "take out by hand" or "helped over corkline by crewmen".
28 - "Release men" present.
37 - 5 men assist by hand.
49 - "Deck hand remove".

BACKDOWN AND "MANUAL ASSISTANCE"

13 - Backdown and "by hand" (or "pull from net"/"personal assistance by crew".
33 - Backdown and 5 men assist.
34 - Backdown and 4 men assist.
35 - Backdown and 3 men assist.
40 - Backdown and 2 men assist.

BACKDOWN AND SPEEDBOAT(S) AND "MANUAL ASSISTANCE"

38 - Backdown and 1 speedboat (?#men) and "manual assistance by crew".
46 - Backdown and (?#) speedboats (?#men) and "manual assistance by crew".
74 - "All methods".

Example of a BRIDGE LOG

007

MARINE MAMMAL LOG SHEET For Yellowfin Tuna Purse Seine Fishery

During each trip report every set made on porpoises or any other marine mammals.

Vessel AMERICAN EAGLE Certificate Holder BEN MAURICIO

Certificate Number FSW 76-2-223

Set No.	Date/ Time	Position	Sea State & Wind Vel.	Number & Species of Marine Mammals: Pursued	Caught	Killed	Seriously Injured	Tuna By Species (Tons)	Methods Used to Remove Marine Mammals from net
#8	1035 / 1-10	3-11 S / 88-12W	SLIGHT / 8-10	300	SPOT 300	—	—	7YF	BRIDGE DOWN
#9	1755 / 1-10	3-17 S / 88-08	SLIGHT / 8-10	500	SPOT 500	—	—	17YF	" "
#27	1005 / 1-21	3-15 S / 87-50	LT. CHOP / 8-10	150	SPOT 150	WBS		5YF	" "
28	1740 / 1-21	3-14 S / 87-53	LT. CHOP / 6-8	500	SPOT 500	1 WBS		5YF	" "
#59	0835 / 2-10	1-20N / 87-11W	LT. CHOP / 1072	150	SPOT 150	—	—	—	"
#60	1455 / 2-10	1-07N / 87-03W	SLIGHT / 6-8	200	SPOT 200	—	—	4YF	"
#65	1000 / 2-12	4-03N / 87-15	SLIGHT / 6-8	SPOT 300N 1200	SPOT 1000	5 SPOT 15		80YF	"
#68	1535 / 2-14	4-13 / 91-27	SLIGHT / 8-10	SPOT 900	800	SPOT 12		30YF	"

RECEIVED
FEB 27 1976
SOUTHWEST REGION

BEAUFORT SCALE
WITH CORRESPONDING SEA STATE CODES

Beaufort number	Wind speed: knots	mph	meters per second	km per hour	Seaman's term	U. S. Weather Bureau term	Estimating wind speed: Effects observed at sea	Effects observed on land	Hydrographic Office: Term and height of waves, in feet	Code	International: Term and height of waves, in feet	Code
0	under 1	under 1	0.0-0.2	under 1	Calm	Light	Sea like mirror.	Calm; smoke rises vertically.	Calm, 0	0		
1	1-3	1-3	0.3-1.5	1-5	Light air		Ripples with appearance of scales; no foam crests.	Smoke drift indicates wind direction; vanes do not move.	Smooth, less than 1	1	Calm, glassy, 0	0
2	4-6	4-7	1.6-3.3	6-11	Light breeze		Small wavelets; crests of glassy appearance, not breaking.	Wind felt on face; leaves rustle; vanes begin to move.	Slight, 1-3	2	Rippled, 0-1	1
3	7-10	8-12	3.4-5.4	12-19	Gentle breeze	Gentle	Large wavelets; crests begin to break; scattered whitecaps.	Leaves, small twigs in constant motion; light flags extended.	Moderate, 3-5	3	Smooth, 1-2	2
4	11-16	13-18	5.5-7.9	20-28	Moderate breeze	Moderate	Small waves, becoming longer; numerous whitecaps.	Dust, leaves, and loose paper raised up; small branches move.			Slight, 2-4	3
5	17-21	19-24	8.0-10.7	29-38	Fresh breeze	Fresh	Moderate waves, taking longer form; many whitecaps; some spray.	Small trees in leaf begin to sway.	Rough, 5-8	4	Moderate, 4-8	4
6	22-27	25-31	10.8-13.8	39-49	Strong breeze		Larger waves forming; whitecaps everywhere; more spray.	Larger branches of trees in motion; whistling heard in wires.			Rough, 8-13	5
7	28-33	32-38	13.9-17.1	50-61	Moderate gale	Strong	Sea heaps up; white foam from breaking waves begins to be blown in streaks.	Whole trees in motion; resistance felt in walking against wind.				
8	34-40	39-46	17.2-20.7	62-74	Fresh gale	Gale	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks.	Twigs and small branches broken off trees; progress generally impeded.	Very rough, 8-12	6	Very rough, 13-20	6
9	41-47	47-54	20.8-24.4	75-88	Strong gale		High waves; sea begins to roll; dense streaks of foam; spray may reduce visibility.	Slight structural damage occurs; slate blown from roofs.	High, 12-20	6		
10	48-55	55-63	24.5-28.4	89-102	Whole gale	Whole gale	Very high waves with overhanging crests; sea takes white appearance as foam is blown in very dense streaks; rolling is heavy and visibility reduced.	Seldom experienced on land; trees broken or uprooted; considerable structural damage occurs.	Very high, 20-40	7	High, 20-30	7
11	56-63	64-72	28.5-32.6	103-117	Storm		Exceptionally high waves; sea covered with white foam patches; visibility still more reduced.		Mountainous, 40 and higher	8	Very high, 30-45	8
12	64-71	73-82	32.7-36.9	118-133	Hurricane	Hurricane	Air filled with foam; sea completely white with driving spray; visibility greatly reduced.	Very rarely experienced on land; usually accompanied by widespread damage.	Confused	9	Phenomenal, over 45	9
13	72-80	83-92	37.0-41.4	134-149								
14	81-89	93-103	41.5-46.1	150-166								
15	90-99	104-114	46.2-50.9	167-183								
16	100-108	115-125	51.0-55.8	184-201								
17	109-118	126-136	55.9-61.2	202-220								

Note: Since January 1, 1938, weather map symbols have been based upon wind speed in knots, at five-knot intervals, rather than upon Beaufort number.

TABLE 4

TRIP NUMBER	VESSEL NAME	VESSEL CODE	CERTIFICATE HOLDER	CERT. NUMBER	LOG RECEIVED	LOG CODED TO PUNCH	LOG RETURN FROM PUNCH	EDIT LOG	LOG IN DATA BASE	TOTAL # SET ON	TOTAL # CAPTURED	TOTAL # KILLED	TOTAL # INJURED	YF	SK	OTHER	TOTAL MAMMAL SETS

Appendix 2. Instructions to data editors for processing 1977-1984 Marine Mammal Bridge Log Data.

1977-1984 BRIDGE LOG PROCESSING PROCEDURES

INTRODUCTION

Bridge logs are completed at sea for each cruise which has been certificated to fish on marine mammals. Upon completion of the trip the bridge logs are turned into the NMFS Field Office, from there the original bridge log is forwarded to our office for coding and incorporation into bridge log data bases. Specific procedures are followed in handling the bridge logs from delivery until loaded into the data base.

I. Receiving bridge logs

A. Upon delivery of the bridge logs from the NMFS Field Office they must be assigned a bridge log trip number. Trip numbers are assigned sequentially as the logs come in starting with trip number 1 for the first cruise of a new year. This trip number is recorded on the backside of the bridge log and will be used later in the coding procedure.

B. Check the vessel name and trip date against the departure and arrival binder for observed cruises, If the bridge log is from a trip which carried a NMFS or IATTC observer then the NMFS cruise number should also be recorded on the bridge log and the trip number we assigned to the bridge log should be recorded in the yearly status binder on the page corresponding to this particular observed cruise.

C. The bridge log should be checked against the list of operator certificates for this year to see if the correct certificate number is recorded on the log.

D. At this point the log is stored in the bridge log folder to await coding.

E. The trip numbers for bridge logs received are then recorded on individual weekly progress sheet under the "received" column.

II. Coding bridge logs

The bridge logs are coded on a 2 card, 80 column, format. (See 1977-1984 Bridge Log Coding Format and Field Variable List). Only sets on marine mammals are coded. However, on trips with no sets on marine mammals, one 2 card record is partially filled out for the trip (see attached example page). In general, data encountered on the original bridge

log are coded as recorded and blank items are to be left blank on the coding sheet. There are a few exceptions which can be seen on the examples page.

All certificated trips should be represented in the bridge log data base. At the end of the year records need to be mocked-up for any bridge logs which are known to be missing. Missing bridge logs for trips with observers on board can be determined by searching through the yearly status book for blank bridge log trip numbers. See example number 8 for coding of missing bridge logs.

See attached set of examples for special cases and clarification of some of the coding procedures.

III. Post Coding Procedures

After coding the bridge logs they are kept together with previously coded logs on a clip board and statused on your individual weekly progress sheet as being rough edited.

After a substantial number of coded logs accumulate on the clip board they are sent out to a keypunch service to be entered on tape. Status this on individual weekly progress report.

After return from keypunch (also on weekly progress report sheet) the data is entered to disk storage (see tape 2 disk procedures) and the normal edit procedures are carried out until the data is all ok and ready to be loaded on the data base tapes.

ATTACHMENTS

1. 1982 Coding Format
2. Sample Coding Format
3. Examples

CODING FORMAT FOR 1977-1984 MARINE MAMMAL BRIDGE LOG DATA CARDS WITH EXPLANATIONS

CARD 1 OF 2

Column

1-3 Trip Number - (use leading zeros) - all cruises are assigned a trip number when received, including boats making schoolfish sets only. Trip number is always filled in on the coding sheet for both cards 1 and 2.

4-6 Set Number - (use leading zeros) - set numbers are coded the same as recorded on the original bridge log. If set numbers are not recorded on the bridge log marine mammal sets are assigned consecutive numbers on the coding sheet.

For trips with no marine mammal sets (all logs or schoolfish) assign a set number of "000" and code trip number, set number of zero, card no., vessel class, certificate number and year of trip. (See example).

7 Card Number - record card number 1 of 2.

8-11 Vessel Code - (use leading zeros) - record the vessel code for this vessel as found in CODE TABLE 3.

12 Vessel Class - code vessel class (1, 2, or 3) as found on CODE TABLE 3 or:

1. carrying capacity $\leq$ 400 tons.
2. c.c. > 400 tons & built before 1961.
3. c.c. > 400 tons & built after 1960.

13-15 Certificate Number - (use leading zeros) - record the last 3 digits of the operators certificate of inclusion.

16-17 Year - last two digits of year the set was made.

18-19 Month - (use leading zeros) - month (2 digits) of set. If unknown try to assign set to a quarter of the year.

Coded as: 15 for Jan. - Mar.
25 for Apr. - Jun.
35 for Jul. - Sept.
45 for Oct. - Dec.

CARD 1 OF 2 CONTINUED

Column

20-21 Day - (use leading zeros) - day of the month for this set. If the day is not stated but can be deduced to within 1 or 2 days then enter the probable date.

22-25 Time - (use leading zeros) - local time that the set was made. Blank if unknown.

26-27 Latitude Degrees - (use leading zeros) - latitude of the set position as recorded on the bridge log. Blank if unknown. If more than one set is made the same day and one of the sets has a recorded position but the other set positions are blank or referred to as "the same area", then try to deduce the degrees of the position on the basis of information available and leave the minutes blank. If latitude or longitude are totally blank, leave that field blank when coding.

28-29 Latitude Minutes - (use leading zeros) - record minutes to the nearest minute if given with seconds. Leave blank if unstated. However, if minutes are given for latitude or longitude but not both, then code as if the unstated minutes are zero.

30 Hemisphere - the hemisphere of the latitude is coded as:

North = 1
South = 2

31-33 Longitude Degrees - (use leading zeros) - longitude of the set position as recorded on the bridge log. Use same guidelines as stated for latitude when questionable.

34-35 Longitude Minutes - (use leading zones) - same guidelines as for minutes of latitude.

36 Hemisphere - the hemisphere of the longitude is coded as:

East = 1
West = 2

If hemisphere is unstated leave blank unless it is obviously east or west.

37 Beaufort Number - as recorded on bridge log. Blank if unstated.

CARD 1 OF 2 CONTINUED

Column

38-39 Swell Height - (use leading zeros) - swell height in feet, rounded to nearest foot. Blank if unstated.

40-41 Species Composition Code of Mammal School - (use leading zeros) composition of school chased.

Species Codes - 01 = pure spotted
02 = pure spinner
03 = mixed spotter and spinner
04 = pure Delphinus
05 = pure streaker
06 = pure Tursiops
07 = other or combinations
08 = whales
09 = unknown (no data)

42-46 Number of spotted chased - (leading zeros are not coded). Estimate recorded as given on bridge log.

47-51 Number of spinners chased - (leading zeros are not coded). Estimate recorded as given on bridge log.

52-56 Number of other marine mammals chased - (leading zeros are not coded. Estimate from log.

57-61 Number of spotted caught - (no leading zeros) - estimate from log.

62-66 Number of spinners caught - (no leading zeros) - estimate from log.

67-71 Number of other marine mammals caught - (no leading zeros) - estimate from log.

72-74 Number of spotters killed - (no leading zeros) - record as given on log.

75-77 Number of spinners killed - (no leading zeros) - record as given on log.

78-80 Number of other marine mammals killed - (no leading zeros) - record as given on log.

CARD 2 OF 2

Column

1-3 Trip Number - same number as on card 1.

4-6 Set Number - same number as on card 1.

7 Card Number - card number 2 of 2.

8-9 Number of spotted injured - (no leading zeros) - record as stated on bridge log.

10-11 Number of spinners injured - (no leading zeros) - record as stated on bridge log.

12-13 Number of other marine mammals injured - (no leading zeros) - record as stated on bridge log.

14-16 Tons of yellow/fin loaded - (no leading zeros) - estimate of log.

17-19 Tons of skipjack loaded - (no leading zeros) - estimate of log.

20-22 Tons of other fish species loaded - (no leading zeros) - estimate from log.

23 Other species code - code number for other species of fish loaded. Refer to CODE TABLE 10.

Code 0 - N/A
Code 1 - Albacore
Code 2 - Black skipjack
Code 3 - Bullet mackerel
Code 4 - Mixed black skipjack and bullet mackerel
Code 5 - Unknown (no data) or mixed YF/SK
Code 6 - Bluefin tuna
Code 7 - Bonito
Code 8 - Bigeye tuna

24 Backdown Y/N? - coded answer to the question: does the bridge log indicate that backdown was used to release porpoise?

1 = yes
2 = no
3 = not applicable

This column should never be blank.

CARD 2 OF 2 CONTINUED

Column

25 Speedboats present Y/N? - coded answer to the question: does the bridge log indicate that speedboat(s) were used to aid ill porpoise release?

1 = Yes
2 = no
3 = not applicable

This column should never be blank.

26 Raft present Y/N? - coded answer to the question: does the bridge log indicate that a raft was used to aid in porpoise release?

1 = yes
2 = no
3 = not applicable

This column should never be blank.

27 Hand rescue Y/N? - coded answer to the question: does the bridge log indicate that men were involved in hand release of porpoise?

1 = yes
2 = no
3 = not applicable

This column should never be blank.

Conditions for coding hand rescue code block.

1. If only speedboats are mentioned then don't credit hand release (code = 2).

2. If only raft mentioned then do credit hand release (code = 1).

3. If speedboats and raft mentioned then do credit hand release (code = 1).

4. If the number of men in the speedboat(s) is stated as being more than 1 man then do credit hand release (code = 1).

5. If the release section on the bridge log is left blank then code release questions with 2's = no.

6. If no marine mammals are captured all of the release questions are to be coded with 3's = not applicable.

CARD 2 OF 2 CONTINUED

Column	
28-42	Total number of porpoise chased, captured, killed, injured - in most cases these code blocks will be left blank. These fields are used for coding the pre-1977 log forms which give no species breakdown. They can also be used for recent bridge logs which have confusing or unknown species composition breakdowns. If columns 28-42 are used then on card 1 species composition (column 40-41) should be coded as unknown (09) and columns 42-80 and columns 8-13 on card two should be left blank.
43-45	NMFS Cruise Number - the cruise number assigned by the NMFS to this vessel trip prior to the vessels departure.

EXAMPLES

1) Blank items on the log should generally be left blank on the coding sheet. An exception to this is:

If bridge log states information for only one species, i.e. "x spotters chased, y spotters captured and z spotters killed" and no spinners or other porpoise information is recorded then the number of spinners and other mammals involved in the set can be coded at zeros.

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITIES	SERIOUS INJURY	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
SPOTTERS	OFFSHORE	400	400	1	0	YELLOWFIN	17	X	
SPINNERS						SKIPJACK	0		
OTHER						OTHER		NO	

i.e. these code blocks would be coded as zeros on the coding form for spinners and other mammals.

2) Mammals chased

a) if zero is entered for chased but porpoise were captured or killed then leave this field(s) blank. LV CHASED BLANK

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITIES	SERIOUS INJURY	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
SPOTTERS	OFFSHORE	500	400	0	0	YELLOWFIN	0	X	
SPINNERS	WHITEBELLY	0	50	0	0	SKIPJACK	0		
OTHER		0	0	0	0	OTHER	0	NO	

i.e. "spinners chased" would not be coded "0" but left blank.

b) if log states "x spotters chased" and "x spotters and y spinners captured" then code school composition as 03, code spotters as is and leave number of spinners chased blank (not stated) instead of coding as zero. Code other species blocks with zeros.

	MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITIES	SERIOUS INJURY	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
1	SPOTTERS	OFFSHORE	500	400	0	0	YELLOWFIN	0	X	
	SPINNERS			100	0	0	SKIPJACK	0		
	OTHER						OTHER	0	NO	
2	SPOTTERS	OFFSHORE		600	0	0	YELLOWFIN	5	X	
	SPINNERS						SKIPJACK			
	OTHER						OTHER		NO	

Example 1 - species composition is 03, leave spinners chased blank, code other species blocks as zeros.

Example 2 - species composition is 01, leave spotters chased blank, code spinners and other species blocks with zeros.

3) Capture, mortality and serious injury blankness

a) If "chased" and/or "caught" contain numbers but "mortalities" and "serious injury" are blank, then leave the blank sections for species involved blank when coding.

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITY TO DATE	SERIOUS INJURY TO DATE	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
SPOTTERS	OFFSHORE	600	600			YELLOWFIN	0	X	RAFT AND SPBT. USED DURING BACKDOWN
SPINNERS			100			SKIPJACK			
OTHER						OTHER		NO	

i.e. in this case leave spotter mortality, spotter injuries, spinners chased, spinner mortality and spinner injury blank, but code zeros for other species code blocks (chased, caught, mortality and injury).

b) If capture is recorded as zero and all blocks to the right are blank then they may be coded as "zeros".

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITY TO DATE	SERIOUS INJURY TO DATE	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
SPOTTERS	OFFSHORE	750	0			YELLOWFIN	0	X	
SPINNERS		0	0		-	SKIPJACK	0		
OTHER						OTHER	0	NO	

i.e. these blocks can be coded with zeros as well as chased and caught for other species.

4) Number of mammals captured

a) If the number recorded for capture is greater than the number recorded for chase then code it as is.

b) Some fishermen consider the term "captured" to mean encircled only. Using our terminology this is incorrect. However, code chased and caught as is even if the notes on the log mention that "all porpoise dove out of net" or "all escaped before rings up". If this is the case the release questions (2.24 - 2.27) would all be coded with "3's" (N/A) even though there is a number entered for capture.

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITY TO DATE	SERIOUS INJURY TO DATE	TUNA	TONS	EXCH.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
SPOTTERS	OFFSHORE	500	600	0	0	YELLOWFIN	0	YES	ALL PORPOISE DOVE
SPINNERS		0	0	0	0	SKIPJACK	0		UNDER NET
OTHER		0	0	0	0	OTHER	0	X	

5) Number killed or seriously injured

a) When kills or injuries show up with no mention of number chased or caught the preceding blocks must be left blank.

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITY	SERIOUS INJURY	TUNA	TONS	SKUNK	MARINE MAMMAL RELEASE PROCEDURES USED & DEVICES
SPOTTERS	OFFSHORE	1000	800	3	0	YELLOWFIN	0	X	1 RAFT
SPINNERS				1	0	SKIPJACK	0		1 SPAT
OTHER						OTHER	0	NO	

i.e. "spinners chased" and "spinners caught" must be left blank. Other species blocks would be coded with zeros. Species composition would be "03" mixed spotters and spinners since spinners did show up.

6) Fish loaded

a) Round up to 1 ton if tonage is equal to or greater than 1/4 ton.

b) If the number of fish is all that is given, then assume 20 fish (YF) = 1/4 ton and round up to 1 ton.

c) If species composition is not stated then assume all of the fish is yellowfin, if the set was made on porpoise (not whales).

d) If the tuna column is left blank whether porpoise are captured or not, then leave tonage fields blank on coding forms.

e) If the species composition is mixed yellowfin and skipjack but no percent breakdown is given then enter all of the catch as "other tuna" using species code 5.

MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITY	SERIOUS INJURY	TUNA	TONS	SKUNK	MARINE MAMMAL RELEASE PROCEDURES USED & DEVICES
SPOTTERS	OFFSHORE	900	900	0	0	YELLOWFIN		X	
SPINNERS		0	0	0	0	SKIPJACK			
OTHER		0	0	0	0	OTHER		NO	

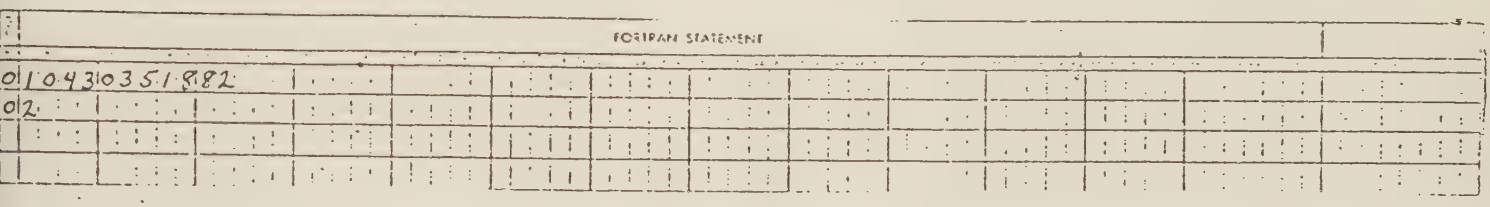
i.e. in this case the code blocks for tons loaded would be blank since no information on tonage is recorded on the bridge log.

7) Bridge logs with no marine mammal sets

If there are no marine mammal sets for a particular trip a coding sheet is still filled out for the trip. The sheet should have one 2 card record partially filled in. The information recorded is:

Card 1 - Trip number, set recorded as "000", card number "1" the vessel code, vessel class, certificate number, and year of the trip.

Card 2 - Trip number, set number "000", card number "2".



8) Observed trips with no bridge logs

All known certificated trips which carried an observer should have a bridge log record. At the end of the previous years cycle all trips which have missing bridge logs should have a coding form partially completed. The information recorded is:

Card 1 - Trip number (assign next one in sequence), leave set number "blank", card number "1", vessel code, vessel class, certificate number, and year.

Card 2 - Trip number, set left blank, card number 2.

SAMPLE CODING FORMAT

SET	DATE AND TIME	POSITION	BEAUFORT	SWELL FEET	MARINE MAMMALS	STOCK NAME	CHASED	CAUGHT	MORTALITIES	SERIOUS INJURY	TUNA	TONS	BKDN.	MARINE MAMMAL RELEASE PROCEDURES USED & REMARKS
1	4/5/82 1205	LAT 12°15'N LONG 100°25'W	2	6	SPOTTERS	OFFSHORE	500	250	0	0	YELLOWFIN	5	YES	1 SPOT, RAFT
					SPINNERS						SKIPJACK			
					OTHER						OTHER		NO	
2	4/6/82 1525	LAT 13°00N LONG 96°10'W	2	5	SPOTTERS	OFF.	600	400	0	0	YELLOWFIN	10	YES	1 SPOT, RAFT
					SPINNERS	W.B.	200	50	1	0	SKIPJACK			
					OTHER						OTHER		NO	
3	4/15/82 0600	LAT 14°30'N LONG 97°45'W	3	4	SPOTTERS						YELLOWFIN	0	YES	ALL DOUÉ OUT OF NET BEFORE RINGS UP.
					SPINNERS						SKIPJACK			
					OTHER	COMMON	1200	0	0	0	OTHER		NO	

GIVEN CRUISE NUMBER 050, VESSEL CODE 0451, CLASS 3 OPERATOR CERT. 515.

17

COMPUTER CENTER
UCSD, LA JOLLA

PROGRAM _____ ACCT. NO. _____

PROGRAMMER _____ DATE _____ PAGE _____ OF _____

FORTRAN PROGRAM SHEET

FORTRAN STATEMENT | IDENTIFICATION SEQUENCE

```
0 50001 1045 135 16 8 20 40 5 1 2 0 5 1 2 15 1 1 0 0 25 2 2 0 6 0 1   50 0   0   0 2 5 0   0   0   0 0
0 5000 1 2 0 0 0 5 0 0 1 1 1 0
0 50002 1045 135 16 8 20 40 6 1 5 2 5 1 3 0 0 1 0 8 6 1 0 2 2 0 5 0 3   50 0 2 0 0   0 4 0 0   5 0   0 0 1
0 5000 2 2 0 0 0 0 1 0 0 0 1 1 1
0 50003 1045 135 16 8 20 41 5 0 6 0 0 1 4 3 0 1 0 8 7 4 5 2 3 0 4 0 4   0   0   0 1 2 0 0   0   0   0 0 0
0 5000 3 2 0 0 0 0 0 0 0 3 3 3
```

Appendix 3. Instructions for coding Marine Mammal Bridge Log Trip Classification records.

TRIP CLASSIFICATION

I. Introduction

Trips have been classified into seven classes (see Coding Format Table 7). The purpose behind this is so that sets made on porpoise within any class can be grouped together for easier study.

Information used in Trip Classification is obtained from the Landing Reports received from Jim Morgan or Gene Nitta at the Regional Office. A typical Landing Report is shown on page (or Table ?).

II. General (Instructions)

A. Receive the Landing Reports from the Regional Office - Terminal Island. The amount of tuna each vessel landed is given in pounds, so convert to tons and fill in List #2.

1. Trip definition - A trip is completed when the vessel arrives in port for unloading. If only a very small percent of fish onboard is unloaded and sold, the trip is still considered to be completed. If the vessel changes its fishing location from one ocean to another, even without unloading, then call each period of fishing in each ocean a separate trip.

B. Two lists are kept up concerning trips - one classified by trip type, vessel class with trip dates, trip number of vessel and amounts of tuna caught (actual landings and crew estimates of amount caught on porpoise). Fill in these lists using the data obtained from the landing reports received from the regional office. (See List#1 and List #2).

C. Code the information from List #2 (and/or Landing Report) to keypunch coding sheets using the coding format listed on page(s) .

1. From the landing report you can get the area fished:

a. Area coded 1 means fishing inside the CYRA line.

b. Area coded 2 means fishing outside the CYRA line

2. Also, whether the season is open or closed has been coded:

    a. Open is Code 1,
    b. Closed is Code 2.

3. To find out whether or not an observer was aboard during the trip, contact the Data Editors, Ext. 347 for an up-to-date list of observer trips, and/or refer to CODE TABLE 2.

D. Send the coded keypunch sheets to UCSD keypunch services. Place the Landing Report in the appropriate folder.

E. When the punched cards and the coding sheets are returned:

1. Place the cards in the appropriately labeled card tray.

2. Place the coding sheet in the manila envelope labeled "Marine Mammal Bridge Log Trip Classification Coding Sheets. There is no edit program for Trip Classification.

Table 5. Trip classification (to be entered in Table 4)

Trip Type	Coded
Before Season Closure	T
Overlapping Season Closure	V
Last Free Trip	L
Regulated Inside	r
Regulated Outside	R
Africa	A
Caribbean	C
Observer Present	O

Table 6. Trip Classification-Categories Marine Mammal Bridge Log Data Cards Are To Be Placed.

Trip type	Vessel Class IV		Vessel Class II		Vessel Class I	
	With observer	Without observer	With observer	Without observer	With observer	Without observer
T	Trip completed before season closure*					
V	Trip overlaps season closure					
L	Trip beginning after closure (within 1 month) and unregulated ("Last free trip")					
r	Regulated trip, inside CYRA					
R	Regulated trip, outside CYRA					
H	African trip					
C	Caribbean trip					

*- Season closure for:

1975 - 3/13/75, 0000 Hrs.
1976 - 3/27/75, 0000 Hrs.

Coding Format Table 7
for
Marine Mammal Bridge Log Trip Classification

Variable	Column #	Information Coded
1	1-2	Year
2	3-5	Trip Number - consecutive series for all vessels in a given year.
3	6-7	Trip Number - of a given vessel in a given year in the Pacific (Enter '00' if not in the Pacific).
4	8-9	Trip Number - of a given vessel in a given year in all waters (including Africa, etc.).
5	10	Trip Type - Code 1 = arriving before closure Code 2 = overlapping closure Code 3 = last free trip (leaving within one month after closure, unregulated) Code 4 = regulated-inside CYRA Code 5 = regulated-outside Code 6 = Africa Code 7 = Caribbean and Atlantic Code 9 = unknown.
6	11	NMFS Observer Aboard - 1 = Yes 2 = No 3 = for part of trip only
7	12-15	Total tons yellowfin landed.
8	16-19	Total tons skipjack landed.
9	20-23	Total tons of other tuna landed-bluefin and bigeye only.
10	24-27	Date left.
11	28-31	Date returned.

Appendix 4. List of Certificate Holders and Certificate Numbers for the years 1976-1982. List is sorted by Certificate Holders code.

Certificate Holders Code	Certificate Holders Name				Calendar Year Certificate Number						
	Last	First	Middle		1976	1977	1978	1979	1980	1981	1982
AB030	BURICH	ANTHONY	JOHN	SR	FSW762349	FSW772107	FSW782535	FSW792566	FSW802626		
AC042	CASTAGNOLA	ANDREW				FSW772013	FSW782596	FSW792554	FSW802557	FSW812596	
AC047	CHULA	ANTONIO	J	JR		FSW772118					
AC067	CRIVELLO	ANDREW	LAURIE		FSW762324		FSW782593				
AD081	DA SILVA	ADRIANO	LUZ					FSW792656	FSW802630	FSW812539	FSW822601
AD082	DA SILVA	ANTONIO	F		FSW762255		FSW782692	FSW792589	FSW802596		FSW822544
AD083	DA SILVA	ANTONIO	J		FSW762284	FSW772012			FSW802527	FSW812520	
AD091	DE SILVA	ANTONIO	F							FSW812565	
AD098	DUNDOV	ANTE			FSW762004	FSW772030	FSW782588	FSW792630			
AF107	FELICIANO	ANTONIO	HERCULANO				FSW782691		FSW802632	FSW812521	
AF114	FERREIRA	ALVARO	PAIVA		FSW762303	FSW772094	FSW782623	FSW792631	FSW802505		
AF115	FERREIRA	ARTHUR	PHILLIP		FSW762201	FSW772066	FSW782534	FSW792604	FSW802549	FSW812525	FSW822586
AF116	FERREIRA	ARTHUR	S								FSW822613
AF120	FILIPPONE	ANTHONY	V				FSW782626				
AF125	FREITAS	ANIBAL	N						FSW802646		
AF126	FREITAS	ARNOLD		JR			FSW782680			FSW812653	FSW822607
AG135	GIOIELLO	ATTILIO			FSW762012						
AG146	GONSALVES	AVALINO	F			FSW772016	FSW782689	FSW792570			
AG147	GONSALVES	AVEY	M					FSW792651	FSW802600		
AG159	GUIDI	AGOSTINO	J		FSW762316						
AG160	GUIDI	ANTHONY	L		FSW762291						
AL180	LARSON	ALBERT	W	JR							FSW822590
AM193	MADRUGA	ARMANDINO	S				FSW782612				
AM200	MARQUES	ANTHONY		JR			FSW782696				
AM205	MASON	ANTHONY	T		FSW762010						
AP239	PARKER	ALAN	D							FSW812658	
AP244	PERREIRA	ALVIN	TONY		FSW762210	FSW772073	FSW782514	FSW792598	FSW802545	FSW812583	FSW822555
AR257	RAMSAY	ARTHUR	H		FSW762253		FSW782673	FSW792657	FSW802536	FSW812550	FSW822548
AR259	REBELO	AUGUST	M		FSW762254	FSW772061	FSW782581	FSW792643	FSW802590	FSW812599	
AR263	RODRIGUES	AUGUSTO	R				FSW782620	FSW792583		FSW812664	FSW822518
AS268	SABELLA	ANTHONY			FSW762282	FSW772055	FSW782542				
AS274	SANTOS	ANTHONY			FSW762279	FSW772086	FSW782549	FSW792629		FSW812576	FSW822618
AS308	STAGNARO	ANDREW	ARNOLD		FSW762313		FSW782504	FSW792503	FSW802512	FSW812532	FSW822584
AS309	STANOJEVICH	ANTON	S		FSW762008						
AT314	TAVARES	ARMAND	M		FSW762271						
AT319	TIPICH	ANTHONY	G		FSW762005						
AV329	VIRISSIMO	ALVARO	R		FSW762295	FSW772110	FSW782628				
AV330	VIRISSIMO	ANTHONY	DAVID			FSW772068	FSW782556	FSW792539	FSW802567	FSW812601	FSW822531
BB024	BLOCKER	BOB	JOHN				FSW782599				
BB025	BLOCKER	BYRON	J				FSW782603				FSW822604
BM194	MADRUGA	BRIAN	RICHARD				FSW782600	FSW792553	FSW802586		
BM206	MAUGHAN	BEN	B	III				FSW792652	FSW802595		
BM207	MAUGHAN	BENJAMIN	BROWN	JR	FSW762240		FSW782518			FSW812647	FSW822564
BM209	MAURICIO	BELCHIOR	ANGELO		FSW762223	FSW772017	FSW782530	FSW792523	FSW802597	FSW812559	FSW822568
BS281	SILVA	BRAZ	R		FSW762276	FSW772100	FSW782644	FSW792581			
BS310	STEFFEN	BRUCE	D		FSW762294						
CC050	CONNERS	CRAIG				FSW772034					
CD078	DA ROSA	CRISTIANO	G		FSW762289	FSW772023	FSW782598	FSW792544	FSW802559	FSW812580	FSW822527

CE101	EGGERS	C	J	JR	FSW762307
CF112	FERNANDES	CLARENCE	J		FSW762274 FSW772113 FSW782606 FSW802602
CF113	FERNANDEZ	CARLOS	G		FSW792654
CG142	GONCALVES	CARL	J		FSW762338
CG143	GONCALVES	CLARIMUNDO		S	FSW812614 FSW822538
CG155	GRACA	CARLOS	ALBERTO		FSW782640 FSW792587 FSW802514 FSW812581
CM210	MC DONELL	CARL	FREDERICK		FSW822575
CM213	MEDEIROS	CHRIS	RALPH		FSW772085 FSW782584 FSW792506 FSW802606 FSW812557 FSW822594
CS270	SANFILIPPO	CALOGERO	CARLO		FSW792634 FSW802625 FSW812640 FSW822592
DB019	BATTAGLIA	DANIEL	J		FSW762347 FSW772033
DC043	CASTAGNOLA	DOMINIC			FSW762230 FSW782658 FSW792512 FSW802509 FSW812562 FSW822540
DC048	CINTAS	DENNIS			FSW792660 FSW802608
DD095	DOIRON	DARRYL	WILSON		FSW762309 FSW812592 FSW822530
DG139	GOMES	DAVID	F		FSW762340
DG157	GREEN	DON	P		FSW762299
DJ171	JOHNS	DANIEL	CHARLES		FSW802622 FSW812637
DJ174	JOSEPH	DUANE	S		FSW762285 FSW772059 FSW782528 FSW792571 FSW802501 FSW812623 FSW822581
DL188	LUZ	DAVID	E		FSW762346 FSW772042 FSW782621
DM195	MADRUGA	DUARTE	RICHARD		FSW762235
DN234	NUNES	DANIEL	A		FSW782569
DP253	POTTER	DENNIS	MICHAEL		FSW762252 FSW772004 FSW782622 FSW792626 FSW802631 FSW812613 FSW822589
DR258	REBELLO	DANIEL	PHILLIP		FSW782675 FSW792603 FSW802629 FSW812584
DR261	REIS	DANIEL	JOSEPH		FSW792653 FSW802578
DS269	SALMON	DAVID	ANTHONY		FSW762302 FSW782503 FSW802599 FSW812625
DS282	SILVA	DANIEL	ERNEST		FSW792610
DS302	SOUZA	DONALD			FSW762215 FSW772078 FSW782619 FSW792562 FSW802118 FSW812590 FSW822567
EC036	CAMACHO	ERNIE	O		FSW812654 FSW822550
ED079	DA ROSA	EDWARD	Q		FSW762301
EF111	FERGUSON	EMERY	JOHN		FSW762337 FSW772039 FSW782659 FSW812663 FSW822578
EP245	PERREIRA	ERLIN	LARRY		FSW762320 FSW772123 FSW782571 FSW792601 FSW802607 FSW812573
EP248	PETERSON	EARL	AUGUST		FSW762300 FSW772103 FSW802633 FSW822621
EP251	PIRAINO	EMIL	V		FSW762217 FSW782547 FSW792533
ES283	SILVA	ERNEST	J		FSW782595 FSW792579
ET312	TAFOYA	EUTIMIO			FSW762228 FSW772074 FSW782609
ET317	TERZOLI	EMANUEL			FSW762243 FSW772111 FSW812617 FSW822571
EW341	WIERY	EMIL			FSW782580 FSW792560
FA003	ALIOTO	FRANK	JOSEPH		FSW782632
FC053	CORREIA	FRANK	THOMAS	JR	FSW772114 FSW782638 FSW792514 FSW802587 FSW812546 FSW822508
FC054	CORREIA	FRANK	THOMAS	SR	FSW762207 FSW772087 FSW782500 FSW792511 FSW822519
FC065	COSTA	FRADIQUE	C		FSW792659
FF110	FERA	FRANK	P		FSW762286 FSW772109 FSW782553 FSW792536 FSW802526 FSW812517 FSW822506
FF117	FERREIRA	FIRMINO			FSW782615 FSW792534 FSW802568 FSW812600 FSW822562
FF118	FERREIRA	FRANCISCO	REBELO		FSW762317 FSW772095 FSW792644 FSW802556
FM211	MC DONELL	FRED	STUART		FSW762214 FSW772018 FSW822576
FN235	NUNES	FRANCISCO	M		FSW802592 FSW812553 FSW822560
FP241	PAULA	FRANK	JOSEPH		FSW762314 FSW772091 FSW782687
FS271	SANFILIPPO	FRANK	JOSEPH		FSW802636 FSW812506 FSW822523
FS303	SOUZA	FRANK	J	JR	FSW782651 FSW792577 FSW802535 FSW812551 FSW822588
GA001	ADAMO	GIUSEPPE	JOE		FSW762011 FSW782654 FSW792596 FSW812572 FSW822595
GA010	ASARO	GAETANO			FSW812645 FSW822510
GC033	CABRAL	GEORGE	FRANK	JR	FSW792586 FSW812603 FSW822541
GC034	CABRAL	GEORGE	F	SR	FSW762017
GC046	CHASE	GREGORY	FRANK		FSW782635
GC055	CORREIA	GREGORY	W		FSW792646 FSW812540
GD073	D'ANGELO	GIROLAMO			FSW762009 FSW772064 FSW782519 FSW792513

GD089	DE LUCA	GIUSEPPE						FSW782637			FSW812621	FSW822614
GF102	FALANTE	GREGORY	PAUL		FSW762264	FSW772007	FSW782522	FSW792600	FSW802520	FSW812515	FSW822515	
GG129	GANGITANO	GIROLAMO	JIM		FSW762297		FSW782507					
GG130	GIACALONE	GAETANO	T			FSW772122				FSW812587	FSW822596	
GG161	GUIDI	GINO	F	JR	FSW762260	FSW772054	FSW782576		FSW802582	FSW812571		
GG162	GUIDI	GINO	PHILLIP							FSW812569		
GH168	HILL	G	WILLIAM				FSW782611					
GM212	MC DONELL	GARY	STUART					FSW792548	FSW802614	FSW812632	FSW822580	
GM215	MEDINA	GARY			FSW762330					FSW812560		
GM216	MEDINA	GEOFFREY	HAROLD							FSW812665	FSW822600	
GS295	SOUSA	GEORGE			FSW762220	FSW772080	FSW782516	FSW792564	FSW802550	FSW812534	FSW822529	
GS296	SOUSA	GEORGE	WILLIAM					FSW792578	FSW802551	FSW812602		
GS304	SOUZA	GEORGE	JOAQUIN		FSW762333	FSW772082	FSW782618	FSW792620	FSW802605	FSW812577		
GT315	TEIXEIRA	GEORGE			FSW762216	FSW772072	FSW782552	FSW792619				
GT318	THOMAS	GERALD	S		FSW762270	FSW772044	FSW782648			FSW812591		
GW340	WHITWORTH	GAIL	GEORGE				FSW782564	FSW792556				
GZ345	ZELUFF	GEORGE	N		FSW762226							
HL179	LANCASTER	HERMAN	D						FSW802650	FSW812524		
HM217	MEDINA	HAROLD			FSW762234	FSW772001	FSW782536		FSW802513	FSW812628	FSW822565	
IL189	LUZ	ISAIAS	M		FSW762327	FSW772119	FSW782568	FSW792537	FSW802521			
IT313	TARANTINO	ISADORE	JOSEPH		FSW762326	FSW772006						
JA004	ALIOTO	JOSEPH	B		FSW762348	FSW772025	FSW782665	FSW792662		FSW812593		
JA009	ARBALLO	JOSE	R		FSW762246	FSW772088	FSW782565	FSW792637	FSW802598			
JB011	BALELO	JOHN	R	JR	FSW762209	FSW772077	FSW782566	FSW792588	FSW802544	FSW812530	FSW822513	
JB012	BALELO	JULIO	GONSALVES	JR	FSW762332		FSW782681	FSW792552	FSW802651	FSW812536		
JB016	BALISTRERI	JOHN	JAMES				FSW782652	FSW792607				
JB017	BALISTRERI	JOSEPH	ANTHONY		FSW762311		FSW782508					
JB020	BATTAGLIA	JOSEPH						FSW792528	FSW802589	FSW812606	FSW822535	
JB027	BOTHAM	JOHN	ROBERT				FSW782630	FSW792621	FSW802510	FSW812533	FSW822605	
JB028	BRENHA	JOSEPH			FSW762218							
JB031	BURICH	JOHN	ANTHONY					FSW792575	FSW802627	FSW812542		
JC032	CABOZ	JOSE	CORREIA		FSW762293	FSW772019	FSW782544	FSW792525	FSW802519	FSW812609		
JC035	CALISE	JOE			FSW762292							
JC038	CANEPA	JOHN			FSW762237	FSW772045	FSW782501	FSW792518	FSW802588	FSW812505		
JC039	CANEPA	JOHN	ANTHONY				FSW782695	FSW792563	FSW802534	FSW812552	FSW822533	
JC056	CORREIA	JERRY				FSW772120	FSW782662					
JC057	CORREIA	JOSEPH	C				FSW782664	FSW792501	FSW802515			
JC058	CORREIA	JOSE	SIMAO	DA LUZ						FSW812608	FSW822501	
JD071	D'AMATO	JOSEPH			FSW762321							
JD074	DA GRACA	JOSE	EUGENIO	JR	FSW762241	FSW772015	FSW782590	FSW792516	FSW802502	FSW812657	FSW822539	
JD075	DA LUZ	JOE	M		FSW762247	FSW772097	FSW782529	FSW792551	FSW802573	FSW812574	FSW822559	
JD076	DA LUZ	JOHN	PAUL					FSW792576				
JD077	DA LUZ	JOSE	F								FSW822599	
JD092	DE SILVA	JOSEPH			FSW762208	FSW772070	FSW782558	FSW792540	FSW802609	FSW812566	FSW822545	
JD093	DE SOUZA	JOSE			FSW762245	FSW772069	FSW782570	FSW792602	FSW802571	FSW812595	FSW822569	
JD099	DUTRA	JOHN	NORMAN			FSW772005	FSW782579	FSW792559	FSW802532			
JF103	FALANTE	JOE	P		FSW762325							
JF108	FELICIANO	JOE					FSW782512	FSW792616				
JF119	FERREIRA	JOSE	A				FSW782614	FSW792628	FSW802635	FSW812582	FSW822612	
JF121	FINETE	JOHN	J				FSW782506		FSW802613			
JF122	FINETE	JOSE	F	S	FSW762204	FSW772092	FSW782574	FSW792565	FSW802537	FSW812556	FSW822557	
JF123	FINETE	JOSE	J		FSW762272	FSW772028	FSW782572	FSW792597	FSW802612			
JF124	FRANCA	JOSE	N								FSW822606	
JF127	FREITAS	JOHN	JOSEPH		FSW762200	FSW772024	FSW782531	FSW792510	FSW802506	FSW812567	FSW822502	
JF128	FREITAS	JOSEPH	R	JR	FSW762224	FSW772038	FSW782525	FSW792517	FSW802524	FSW812516	FSW822505	

JG131	GIACALONE	JOSEPH	J		FSW762331		FSW782688	FSW792543	FSW802617	FSW812502	FSW822516	
JG136	GLIGO	JOSEPH	P		FSW762233				FSW802611			
JG137	GOIS	JOHN	F				FSW782633					
JG138	GOIS	JOSEPH	F				FSW782634					
JG140	GOMES	JOHN	L		FSW762212							
JG141	GOMES	JOSEPH			FSW762262		FSW782660					
JG148	GONSALVES	JOHN	ANTHONY		FSW762266	FSW772040	FSW782521	FSW792636	FSW802574	FSW812588	FSW822570	
JG152	GOULART	JOE	VICTOR			FSW772079	FSW782557	FSW792524	FSW802645	FSW812639		
JG154	GOUVEIA	JOHN	THOMAS		FSW762273	FSW772036	FSW782527				FSW822623	
JG163	GUIDI	JOSEPH	MICHAEL		FSW762261	FSW772096	FSW782545	FSW792542	FSW802610	FSW812627	FSW822507	
JG164	GUIDI	JULIO	VITO	JR			FSW782676	FSW792561	FSW802637	FSW812555	FSW822566	
JH167	HERNANDEZ	JOE	L		FSW762013							
JI169	IZIDORO	JOSEPH	DAVID					FSW792639	FSW802504	FSW812629		
JJ170	JARDIN	JOSEPH	C		FSW762344	FSW772090						
JJ172	JORGE	JOSE	S			FSW772014	FSW782543	FSW792532	FSW802604	FSW812528	FSW822553	
JL183	LEWIS	JOSEPH	L				FSW782685	FSW792611				
JL184	LIPANOVICH	JOE	P		FSW762002							
JL187	LUIS	JOSE	A						FSW802621			
JM191	MACHADO	JOHN	A						FSW802643	FSW812605		
JM202	MARTIN	JAMES	W		FSW762323		FSW782682				FSW822591	
JM208	MAUGHAN	JOHN					FSW782602					
JM218	MEDINA	JOHN								FSW812527		
JM223	MEZIN	JOHN						FSW792648	FSW802591			
JN233	NICKELS	JAMES	E				FSW782597					
JP237	PARISI	JOSEPH					FSW782646					
JP238	PARISI	JOSEPH		III			FSW782647		FSW802640			
JQ254	QUINTANILLA	JOE					FSW782690					
JR256	RAFFLES	JOSE	S			FSW772011						
JR260	REBELO	JOSE	ROMAN			FSW772117	FSW782594	FSW792520	FSW802543	FSW812538	FSW822526	
JR267	RYAN	JOHN	ALBAN							FSW812626	FSW822598	
JS275	SANTOS	JAMES	J					FSW792614				
JS276	SANTOS	JOHN	M					FSW792658	FSW802540	FSW812586	FSW822543	
JS277	SANTOS	JOHN	THOMAS				FSW782555			FSW812612		
JS278	SCAFIDI	JOSEPH			FSW762251				FSW802648			
JS284	SILVA	JAMES	EDGAR						FSW802623	FSW812522		
JS285	SILVA	JOAO	M							FSW812660	FSW822620	
JS286	SILVA	JOHN	ANTHONY		FSW762249	FSW772084	FSW782592	FSW792618	FSW802552	FSW812537	FSW822525	
JS287	SILVA	JOSEPH	J		FSW762304							
JS288	SILVA	JOSE	MANUEL	GONCALVES							FSW822536	
JS292	SILVEIRA	JOE	JORDAN		FSW762202	FSW772093	FSW782573	FSW792535	FSW802539	FSW812531	FSW822583	
JS293	SILVEIRA	JOHN	JOSEPH			FSW772104	FSW782515	FSW792502	FSW802511	FSW812504		
JS297	SOUSA	JACK	SIMOES				FSW782520		FSW802620	FSW812624	FSW822609	
JS298	SOUSA	JOAO	N							FSW812649		
JS305	SOUZA	JORDAN			FSW762281	FSW772026	FSW782562	FSW792641	FSW802593			
JT316	TEIXEIRA	JOHN	JOSEPH				FSW782582	FSW792550	FSW802569	FSW812529		
JT320	TROGDON	JACK	A					FSW792508				
JV323	VALGELLINI	JOE			FSW762014	FSW772105						
JV326	VARLEY	JAMES	M				FSW782669		FSW802601			
JV327	VASQUES	JOAQUIM	R				FSW782666					
JV328	VERGA	JOSEPH	P		FSW762006	FSW772102				FSW812594		
JV331	VIRISSIMO	JOE	CARLOS				FSW782641			FSW812661		
JV332	VIRISSIMO	JOHN	P		FSW762268		FSW782677	FSW792625				
JV333	VIRISSIMO	JOSE	CONCEICAO				FSW782678	FSW792558	FSW802503	FSW812620	FSW822619	
JZ346	ZOLEZZI	JOHN	BAPTIST	III				FSW792509	FSW802530	FSW812503	FSW822524	
JZ347	ZOLEZZI	JOHN	B	JR	FSW762315	FSW772112	FSW782656	FSW792505	FSW802518	FSW812501		

JZ348	ZOLEZZI	JULIUS	H		FSW762353	FSW772046	FSW782502					
KM192	MACLEAN	KENNETH	J	JR							FSW812648	
LC059	CORREIA	LAWRENCE	ALFRED				FSW782684	FSW792515	FSW802585	FSW812547	FSW822520	
LC060	CORREIA	LEO	E		FSW762236	FSW772067	FSW782510	FSW792568	FSW802547	FSW812541	FSW822511	
LD080	DA ROSA	LARRY	SILVA						FSW802647	FSW812579	FSW822528	
LD088	DE FRANCA	LUIS								FSW812638		
LD096	DRUMMOND	LEONARD	T		FSW762339							
LG165	GUIDI	LOUIS	ANTHONY		FSW762342	FSW772056	FSW782577	FSW792569	FSW802576	FSW812597		
LL190	LUZ	LOUIE	SILVA			FSW772057	FSW782513					
LP240	PATELLA	LARRY	J		FSW762350	FSW772031	FSW782537					
LP246	PERREIRA	LARRY	E			FSW772083	FSW782608					
LP247	PERRY	LESLIE	T		FSW762288					FSW812618		
LP252	PIRAINO	LAWRENCE	EMIL						FSW802553			
LR266	ROMANI	LOUIS	HAROLD		FSW762283	FSW772020	FSW782583	FSW792608				
LS294	SITTA	LOUIS	ALBERT			FSW772108	FSW782674					
LS299	SOUSA	LIONEL			FSW762211	FSW772075	FSW782511	FSW792545	FSW802546	FSW812535		
LV324	VARGAS	LIONEL	J					FSW792599				
LZ349	ZUANICH	LAWRENCE	JACK								FSW822554	
MA002	AGUIRRE	MANUEL			FSW762016	FSW772041						
MA007	ANDRADE	MANUEL	J							FSW812650	FSW822611	
MC049	COITO	MANUEL	J		FSW762345							
MC061	CORREIA	MANUEL	BAPTISTA					FSW792549	FSW802528	FSW812568		
MC062	CORREIA	MARK									FSW822521	
MC063	CORREIA	MAURICE	F		FSW762225	FSW772076		FSW792632				
MC064	CORREIA	MAURICE	GREGORY		FSW762231	FSW772021	FSW782517	FSW792546	FSW802542	FSW812554	FSW822561	
MC068	CRIVELLO	MARIO	LOUIS		FSW762248	FSW772063	FSW782661	FSW792612	FSW802581	FSW812578		
MD084	DA SILVA	MANUEL	C		FSW762278	FSW772089	FSW782554	FSW792504	FSW802507	FSW812544	FSW822573	
MD085	DA SILVA	MANUEL	JOAO								FSW822603	
MD086	DA SILVA	MARIO	G							FSW812651	FSW822556	
MD094	DI COLA	MARIO				FSW772116	FSW782551					
MF104	FALANTE	MANUEL			FSW762265							
MG132	GIACALONE	MATTEO	A					FSW792633		FSW812570	FSW822563	
MG133	GIACALONE	MATTHEW	JOHN					FSW792574				
MG144	GONCALVES	MANUAL	C		FSW762259	FSW772060	FSW782639			FSW812598		
MG149	GONSALVES	MANUEL	C								FSW822503	
MG150	GONSALVES	MANUEL	G		FSW762306	FSW772010	FSW782617					
MG151	GORDON	MILFORD	I							FSW812652		
MG156	GRACA	MANUEL			FSW762221							
MJ173	JORGE	MANUEL	S		FSW762229		FSW782560	FSW792647	FSW802603	FSW812607	FSW822552	
MK176	KAMBER	MILAN					FSW782587	FSW792591	FSW802564	FSW812508	FSW822587	
MK177	KATNICH	MARIJAN		JR	FSW762007							
MM219	MEDINA	MANUEL	GARY			FSW772002	FSW782653	FSW792522	FSW802517		FSW822534	
MM225	MISLOV	MIROSLAV					FSW782589	FSW792609	FSW802563	FSW812510		
MN232	NEVES	MANUEL		JR	FSW762244		FSW782671	FSW792590	FSW802641			
MP236	PACHECO	MANUEL	DA LUZ				FSW782657	FSW792585	FSW802577	FSW812604	FSW822522	
MR255	RADOVCIC	MARKO		JR					FSW802644			
MR264	RODRIGUES	MANUEL	AUGUSTO				FSW782649	FSW792635	FSW802579	FSW812576	FSW822532	
MS272	SANFILIPPO	MARIO	C							FSW812615	FSW822542	
MS273	SANTANA	MANUEL			FSW762275	FSW772037	FSW782663					
MS300	SOUSA	MANUEL	JOAQUIN		FSW762328		FSW782509	FSW792582	FSW802570	FSW812631	FSW822577	
MS301	SOUSA	MANUEL	M				FSW782559					
MS306	SOUZA	MANUEL			FSW762269							
MV325	VARGAS	MANUEL	S	JR	FSW762203	FSW772065	FSW782533	FSW792605	FSW802548	FSW812526	FSW822593	
MV334	VIRISSIMO	MANUEL	CORREIA		FSW762258		FSW782642	FSW792624		FSW812642		
MV335	VIRISSIMO	MANUEL	O				FSW782616	FSW792538				

WW342	WILLIAMS	MICHAEL	D	
NH166	HEAD	NORMAN	R	
NL181	LAVALOUIS	NICHOLAS	L	
NL186	LOPEZ	NORBERTO	O	
NM199	MARCIEL	NELLO	G	
NM224	MEZIN	NORMAN	PETE	
NM229	MONTANO	NICOLAS	H	
OB013	BALELO	ONESIMO		
OM203	MARTIN	OTHA	W	
PA008	ANDRICH	PETE		
PB015	BALESTRIERI	PETE		
PB018	BALISTRIERI	PAUL	JOSEPH	
PB023	BIAZEVICH	PAUL	R	
PD072	D'AMATO	PIETRO	A	
PD090	DE LUCA	PIETRO	SALVATORE	
PF106	FELANDO	PHILIP	J	
PG134	GIACALONE	PETER		
PL182	LAWTON	PHILIP	A	
PM197	MAGELLAN	PAUL	A	
PM226	MISLOV	PAVE		
PS279	SEMCZUK	PAUL	N	
PT321	TRUTANICH	PETER	P	
PV322	VALCIC	PAVE	V	
RB014	BALELO	RICHARD	G	SR
RB022	BEECHE	RODRIGO	ENRIQUE	
RC040	CARVALHO	RALPH	J	
RC041	CASEMERO	RUSSELL	JAMES	JR
RC045	CHAGAS	RICHARD		
RC052	CORRAO	ROSS		
RD097	DUMLJAK	ROKO	G	
RE100	EASTON	ROBERT	WILLIAM	
RF105	FALANTE	RAYMOND	P	
RF109	FELICIANO	RALPH	STEVEN	
RG145	GONCALVES	RUI	BRAZO	
RJ175	JOSEPH	RICHARD	WOODROW	JR
RL185	LIRA	RAUL	PONTES	
RM201	MARQUES	RICHARD		
RM214	MEDEIROS	RAYMOND	O	
RM220	MEDINA	RICHARD	J	
RM228	MONIZ	RICHARD	W	
RM231	MOTTA	ROBERT	D	
RP249	PETTON	ROBERT	E	
RP250	PIA	RAYMOND	J	
RS280	SERPA	RUI		
RS289	SILVA	RALPH		III
RS290	SILVA	RALPH	F	JR
RS311	STEPHENSON	RICHARD	JOHN	
RV336	VIRISSIMO	RICHARD	NORMAN	
RV337	VIRISSIMO	ROBERT	MANUEL	
RV338	VIRISSIMO	ROLAND	L	
RW343	WILLIAMS	RICHARD	DANA	
SB029	BRUNETTO	SPIRIDIONE		
SC066	CRESCI	SALVATORE		
SD087	DA SILVA	SERGIO	MILITAO	
SM221	MEDINA	STEPHEN	JOSEPH	

					FSW802619	FSW812523	
FSW762280		FSW782670					
		FSW782561	FSW792529	FSW802516			
FSW762351	FSW772051	FSW782532					
	FSW772022	FSW782541					
			FSW792649	FSW802580			
	FSW772115	FSW782667					
						FSW812635	
FSW762015							
FSW762242	FSW772106	FSW782524	FSW792627			FSW812636	FSW822608
	FSW772050		FSW792650				
FSW762267		FSW782672		FSW802508	FSW812634		
		FSW782694	FSW792640				FSW822622
FSW762001							
FSW762298	FSW772027	FSW782540	FSW792530	FSW802531	FSW812558	FSW822517	
					FSW812622	FSW822615	
FSW762227							
				FSW802638	FSW812644		
			FSW792547				
FSW762238				FSW802642			
FSW762352	FSW772101	FSW782586	FSW792593	FSW802560	FSW812512		
FSW762341		FSW782610		FSW802634	FSW812585		
FSW762343							
				FSW802639	FSW812509		
		FSW782539	FSW792541	FSW802522	FSW812519		
		FSW782697	FSW792622	FSW802558	FSW812513	FSW822597	
FSW762336	FSW772035	FSW782526	FSW792572	FSW802523	FSW812518	FSW822585	
FSW762318	FSW772029	FSW782567	FSW792521				
					FSW812656		
FSW762322							
FSW762329	FSW772049	FSW782585	FSW792592	FSW802566	FSW812511		
		FSW782655	FSW792584	FSW802628	FSW812650		
			FSW792655		FSW812514	FSW822514	
FSW762277			FSW792615	FSW802624			
		FSW782693		FSW802649			
	FSW772121	FSW782624	FSW792617		FSW812633	FSW822512	
FSW762296	FSW772098	FSW782643	FSW792555	FSW802594			
	FSW772043						
FSW762205		FSW782591	FSW792507				
		FSW782679				FSW822610	
FSW762256							
FSW762334	FSW772062	FSW782601					
FSW762250	FSW772099						
FSW762219							
					FSW812659	FSW822617	
		FSW782604	FSW792580	FSW802584	FSW812548	FSW822574	
FSW762222	FSW772053	FSW782575	FSW792573	FSW802533	FSW812545	FSW822546	
FSW762206	FSW772047	FSW782605		FSW802554	FSW812549	FSW822547	
FSW762312	FSW772003	FSW782645	FSW792661	FSW802616	FSW812611	FSW822624	
	FSW772052	FSW782629	FSW792527		FSW812619	FSW822558	
FSW762290	FSW772058	FSW782627	FSW792519				
FSW762308	FSW772009	FSW782631					
FSW762305	FSW772071	FSW782563	FSW792557	FSW802575	FSW812589	FSW822602	
FSW762263	FSW772008	FSW782523	FSW792567	FSW802525	FSW812564	FSW822509	
					FSW812641	FSW822616	
	FSW772124	FSW782505		FSW802583			

SR262	RIBEIRO	STEVEN	J		FSW762335	FSW772032	FSW782538	FSW792531	FSW802529	FSW812561	FSW822504
TC051	CORONA	THOMAS	ANTHONY						FSW802538		
TC069	CRIVELLO	THOMAS	ANTHONY		FSW762257	FSW772081	FSW782607	FSW792613		FSW812563	FSW822537
TM204	MARTINOVICH	TONY	F		FSW762003						
TM227	MITTENEN	THOMAS	W		FSW762319						
TR265	RODRIGUES	TONY	JOSEPH			FSW772048	FSW782550				
VA005	ALIOTO	VITTO								FSW812646	
VA006	ALTAVILLA	VINCENT	M				FSW782578	FSW792645			
VB021	BATTAGLIA	VINCENT	N							FSW812662	
VC037	CAMACHO	VICTOR	M							FSW812655	FSW822549
VC044	CASTAGNOLA	VITO	LOUIS					FSW792642			
VC070	CRIVELLO	VINCENZO			FSW762018		FSW782686	FSW792638	FSW802572		
VG153	GOULARTE	VICTOR	S				FSW782625				
VG158	GUARRASI	VINCENT	J		FSW762287						
VP243	PERIC	VINCI						FSW792595	FSW802562	FSW812643	FSW822582
VY344	YELUSICH	VINCENT	MIKE				FSW782636	FSW792606			
WB026	BOLLIN	WALTER	S		FSW762232						
WM196	MADRUGA	WILLIAM		JR						FSW812616	FSW822572
WM198	MAGELLAN	WILLIAM	ABILIO		FSW762239		FSW782546	FSW792526			
WM222	MEDINA	WILLIAM	M				FSW782548				
WM230	MORRISON	WILLIAM	L				FSW782683				
WP242	PELLATIRO	WILLIAM	LOUIS							FSW812610	
WS291	SILVA	WILLIAM	J		FSW762213		FSW782613	FSW792623			
WS307	SOUZA	WILBUR	JOSEPH		FSW762310		FSW782658				
WW339	WEINER	WILLIAM	ALLAN				FSW782650	FSW792594	FSW802561	FSW812543	
ZK178	KOLEGA	ZARKO							FSW802565	FSW812507	

Appendix 5. List of Certificate Holders, Vessel codes, NMFS Cruise number, and Certificate number for the years 1976-1982. List is sorted by Certificate Holders code and NMFS Cruise number.

Certificate Holders Code	Vessel Code	NMFS Cruise	Calendar Year Certificate Number
AB030	0317	220	FSW772107
AC042	0310	185	
AC042	0310	260	FSW772013
AC042	0310	350	FSW782596
AC042	0454	512	FSW792554
AD081	0462	643	FSW802630
AD082	0440	476	FSW792589
AD098	0306	148	FSW762004
AD098	0410	333	FSW782588
AF107	0358	675	FSW812521
AF114	0444	261	FSW772094
AF114	0444	335	FSW782623
AF114	0449	584	FSW802505
AF115	0338	345	FSW782534
AF115	0338	576	FSW802549
AF115	0338	653	FSW802549
AF125	0343	669	FSW802646
AF126	0440	764	FSW812653
AG146	0455	482	FSW792570
AG147	0455	545	FSW792651
AG160	0380	210	FSW762291
AM205	0136	199	FSW762010
AP244	0402	141	FSW762210
AP244	0402	289	FSW772073
AP244	0402	396	FSW782514
AP244	0402	483	FSW792598
AR257	0433	176	FSW762253
AR257	0433	195	FSW762253
AR257	0301	419	FSW782673
AR257	0327	651	FSW802536
AR259	0437	315	FSW772061
AR259	0346	408	FSW782581
AR259	0362	585	FSW802590
AR259	0302	747	FSW812599
AR263	0371	371	FSW782620
AR263	0371	425	FSW782620
AR263	0371	517	FSW792583
AS268	0430	171	FSW762282
AS268	0356	309	FSW772055
AS268	0356	390	FSW782542
AS274	0440	146	FSW762279
AS274	0440	286	FSW772086
AS274	0440	356	FSW782549
AS274	0414	417	FSW782549
AS274	0414	513	FSW792629

AS274	0414	724	FSW812576
AV329	0379	151	FSW762295
AV330	0436	258	FSW772068
BM194	0452	382	FSW782600
BM194	0452	479	FSW792553
BM194	0452	614	FSW802586
BM209	0441	134	FSW762223
BM209	0441	287	FSW772017
BM209	0441	360	FSW782530
BM209	0441	477	FSW792523
BM209	0441	705	FSW812559
BS281	0358	153	FSW762276
BS281	0437	381	FSW782644
CD078	0432	179	FSW762289
CD078	0432	237	FSW772023
CD078	0432	363	FSW782598
CD078	0432	432	FSW782598
CM213	0445	262	FSW772085
CM213	0445	358	FSW782584
CM213	0445	420	FSW782584
CM213	0445	597	FSW802606
CM213	0445	743	FSW812557
DB019	0362	209	FSW762347
DB019	0362	301	FSW772033
DC043	0310	224	FSW772013
DC043	0310	416	FSW782668
DC043	0310	510	FSW792512
DC043	0310	641	FSW802509
DC043	0310	756	FSW812562
DD095	0328	181	FSW762309
DJ174	0386	255	FSW772059
DJ174	0386	344	FSW782528
DJ174	0415	714	FSW812623
DL188	0318	211	FSW762346
DL188	0318	293	FSW772042
DM195	0437	144	FSW762235
DM195	0385	203	FSW762235
DM195	0448	222	
DP253	0382	231	FSW772004
DP253	0312	501	FSW792626
DP253	0431	710	FSW812613
DR258	0305	528	FSW792603
DS269	0317	173	FSW762302
DS302	0311	170	FSW762215
DS302	0174	304	FSW772078
DS302	0335	380	FSW782619
ED079	0316	154	FSW762301
EF111	0320	200	FSW762337
EF111	0320	311	FSW772039
EF111	0358	407	FSW782659
EP248	0349	218	FSW772103
ET312	0410	139	FSW762228
ET312	0410	292	FSW772074
ET317	0141	273	FSW772111
FC053	0308	312	FSW772114

FC053	0308	413	FSW782638
FC054	0308	172	FSW762207
FF110	0405	302	FSW772109
FF110	0405	386	FSW782553
FF110	0407	447	FSW782553
FF110	0407	567	FSW792536
FF110	0407	697	FSW812517
FF117	0435	433	FSW782615
FF117	0435	508	FSW792534
FF117	0435	699	FSW812600
FF118	0447	300	FSW772095
FP241	0360	294	FSW772091
FP241	0352	442	FSW782687
FS271	0186	733	FSW812506
FS303	0426	435	FSW782651
FS303	0426	550	FSW792577
FS303	0426	619	FSW802535
GA001	0145	521	FSW792596
GC034	0404	205	FSW762017
GC055	0216	730	FSW812540
GD073	0145	152	FSW762009
GD073	0404	367	FSW782519
GD073	0355	460	FSW792513
GD089	0393	414	FSW782637
GF102	0323	357	FSW782522
GF102	0323	491	FSW792600
GG129	0356	183	FSW762297
GG129	0356	198	FSW762297
GG129	0212	426	FSW782507
GG130	0325	330	FSW772122
GG130	0067	701	FSW812587
GG130	0067	787	FSW822596
GG161	0341	161	FSW762260
GG161	0341	298	FSW772054
GG161	0341	364	FSW782576
GG162	0341	708	FSW812569
GM216	0187	783	FSW822600
GS295	0400	137	FSW762220
GS295	0400	299	FSW772080
GS295	0400	383	FSW782516
GS295	0400	546	FSW792564
GS296	0400	700	FSW812602
GS304	0391	259	FSW772082
GS304	0391	379	FSW782618
GS304	0391	452	FSW782618
GT315	0216	143	FSW762216
GT315	0216	303	FSW772072
GT315	0174	393	FSW782552
GT318	0355	142	FSW762270
GT318	0355	281	FSW772044
GZ345	0373	202	FSW762226
HL179	0343	669	FSW802650
HM217	0449	307	FSW772001
HM217	0447	401	FSW782536
IL189	0308	190	FSW762327

IL189	0330	320	FSW772119
IL189	0358	589	FSW802521
IT313	0359	233	FSW772006
JA004	0352	264	FSW772025
JA009	0351	174	FSW762246
JA009	0351	322	FSW772088
JA009	0351	518	FSW792637
JA009	0351	552	FSW792637
JB011	0307	242	FSW772077
JB011	0307	349	FSW782566
JB011	0307	438	FSW782566
JB011	0307	534	FSW792588
JB016	0150	403	FSW782652
JB020	0439	462	FSW792528
JB020	0439	662	FSW802589
JB020	0439	770	FSW822535
JB031	0349	461	FSW792575
JC032	0442	361	FSW782544
JC032	0442	478	FSW792525
JC038	0186	186	FSW762237
JC038	0186	217	FSW772045
JC038	0186	283	FSW772045
JC038	0433	394	FSW782501
JC038	0433	457	FSW792518
JC038	0433	561	FSW792518
JC038	0433	623	FSW802588
JC039	0385	540	FSW792563
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JC057	0352	442	FSW792501
JC057	0352	547	FSW792501
JC057	0352	635	FSW802515
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JD074	0444	529	FSW792516
JD074	0444	616	FSW802502
JD075	0414	318	FSW772097
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JD092	0347	226	FSW772070
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JD092	0347	385	FSW782558
JD092	0458	562	FSW792540
JD093	0398	138	FSW762245
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JD099	0448	313	FSW772005
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JF103	0442	189	FSW762325
JF108	0311	384	FSW782512
JF108	0161	494	FSW792616
JF119	0339	376	FSW782614
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JF122	0426	240	FSW772092

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JF123	0311	492	FSW792597
JF127	0343	238	FSW772024
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JF127	0343	511	FSW792510
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JG136	0314	574	FSW802611
JG141	0359	135	FSW762262
JG148	0302	159	FSW762266
JG148	0312	278	FSW772040
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JG152	0311	297	FSW772079
JG154	0407	194	FSW762273
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JG154	0407	373	FSW782527
JG163	0304	317	FSW772096
JG164	0341	485	FSW792561
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JJ172	0439	188	
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JJ172	0372	422	FSW782543
JJ172	0372	502	FSW792532
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JJ172	0372	617	FSW802604
JJ172	0464	679	FSW812528
JL183	0446	374	FSW782685
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JM191	0372	658	FSW802643
JM202	0382	231	
JR256	0442	288	FSW772011
JR260	0332	316	FSW772117
JR260	0332	391	FSW782594
JR260	0332	487	FSW792520
JR260	0332	629	FSW802543
JR260	0332	771	FSW822526
JS276	0339	568	FSW792658
JS278	0307	167	FSW762251
JS278	0342	265	
JS278	0454	664	FSW802648
JS285	0352	765	FSW812660
JS286	0301	248	FSW772084
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JS286	0301	776	FSW822525
JS292	0361	251	FSW772093
JS292	0426	353	FSW782573
JS293	0361	346	FSW782515
JS293	0361	409	FSW782515
JS297	0355	415	FSW782520
JS305	0303	249	FSW772026
JT316	0437	555	FSW792550
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JV328	0067	158	FSW762006
JV328	0136	267	FSW772102
JV328	0317	269	FSW772102
JV332	0362	392	FSW782677
JV333	0335	441	FSW782678
JV333	0335	530	FSW792558
JV333	0440	609	FSW802503
JV333	0470	767	FSW812620
JZ346	0212	573	FSW802530
JZ346	0212	644	FSW802530
JZ347	0212	219	FSW772112
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JZ348	0433	280	FSW772046
LC060	0385	272	FSW772067
LC060	0216	459	FSW792568
LD096	0360	197	FSW762339
LG165	0327	266	FSW772056
LG165	0327	323	FSW772056
LG165	0327	424	FSW782577
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LL190	0161	247	FSW772057
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LP246	0395	308	FSW772083
LP247	0146	162	FSW762288
LR266	0326	145	FSW762283
LR266	0326	305	FSW772020
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LS294	0362	392	FSW782674
LS299	0387	243	FSW772075
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MA002	0302	321	FSW772041
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MC063	0408	246	FSW772076
MC064	0367	136	FSW762231
MC064	0367	277	FSW772021
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MC064	0367	472	FSW792546
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MC064	0367	621	FSW802542

MC064	0466	720	FSW812554
MC068	0332	166	FSW762248
MC068	0332	228	FSW772081
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MC068	0386	446	FSW782661
MC068	0386	647	FSW802581
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MD084	0434	191	FSW762278
MD084	0434	239	FSW772089
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MF104	0323	157	FSW762265
MG132	0303	698	FSW812570
MG144	0357	236	FSW772060
MG144	0357	334	FSW782639
MG144	0343	768	FSW812598
MG150	0382	296	FSW772010
MG156	0426	175	FSW762221
MJ173	0439	208	FSW762229
MJ173	0439	398	FSW782560
MJ173	0439	542	FSW792647
MK176	0306	338	FSW782587
MK176	0306	493	FSW792591
MK176	0306	571	FSW802564
MM219	0187	271	FSW772002
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MM225	0322	348	FSW782589
MM225	0186	443	FSW782589
MM225	0322	484	FSW792609
MN232	0369	150	FSW762244
MN232	0381	155	FSW762244
MN232	0351	421	FSW782671
MN232	0398	652	FSW802641
MP236	0467	731	FSW812604
MR264	0414	586	FSW802579
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MR264	0414	724	FSW812576
MR264	0414	775	FSW822532
MS300	0186	354	FSW782509
MS300	0186	468	FSW792582
MS300	0186	610	FSW802570
MS300	0331	736	FSW812631
MS306	0312	147	FSW762269
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MV325	0338	227	FSW772065
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MV325	0338	429	FSW782533
MV334	0405	149	FSW762258
MV334	0330	439	FSW782642
MV334	0355	536	FSW792624
MV335	0436	368	FSW782616
MV335	0436	458	FSW792538
NL186	0416	241	FSW772051
NM199	0371	250	FSW772022
NM199	0352	359	FSW782541

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NM229	0145	326	FSW772115
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OB013	0331	187	FSW762015
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OM203	0358	270	FSW772106
OM203	0302	454	FSW782524
PB015	0434	418	FSW782672
PD072	0446	229	FSW772027
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PD072	0446	374	FSW782540
PD072	0446	455	FSW792530
PD072	0446	626	FSW802531
PD090	0393	760	FSW812622
PG134	0306	757	FSW812644
PL182	0431	480	FSW792547
PM197	0445	654	FSW802642
PM226	0315	355	FSW782586
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PT321	0313	201	FSW762343
RB014	0302	522	FSW792541
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RB022	0382	453	FSW782697
RB022	0382	672	FSW802558
RB022	0382	727	FSW812513
RC040	0397	245	FSW772035
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RC040	0351	746	FSW812518
RC041	0335	253	FSW772029
RC041	0430	377	FSW782567
RD097	0314	192	FSW762329
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RD097	0314	574	FSW802566
RF109	0457	532	FSW792615
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RJ175	0431	327	FSW772121
RJ175	0312	399	FSW782624
RJ175	0447	495	FSW792617
RL185	0148	254	FSW772098
RL185	0362	392	FSW782643
RM231	0339	244	FSW772062
RP249	0393	177	FSW762250
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RS289	0198	704	FSW812548
RS290	0198	193	FSW762222
RS290	0198	275	FSW772053
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RS290	0198	411	FSW782575
RS290	0198	434	FSW782575
RS290	0198	451	FSW782575
RS290	0198	497	FSW792573
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RS311	0212	362	FSW782605
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RV336	0305	164	FSW762312
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RV336	0451	766	FSW812611
RV337	0379	284	FSW772052
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RV337	0379	523	FSW792527
RV337	0461	713	FSW812619
RV338	0443	257	FSW772058
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RV338	0443	436	FSW782627
RW343	0368	204	FSW762308
RW343	0342	328	FSW772009
RW343	0342	378	FSW782631
RW343	0325	397	FSW782631
SB029	0451	274	FSW772071
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SB029	0451	423	FSW782563
SB029	0451	506	FSW792557
SC066	0377	221	FSW772008
SC066	0320	402	FSW782523
SM221	0328	332	FSW772124
SM221	0328	347	FSW782505
SR262	0344	196	FSW762335
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SR262	0368	366	FSW782538
SR262	0368	456	FSW792531
SR262	0368	551	FSW792531
TC069	0150	235	FSW772081
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TM227	0350	182	FSW762319
TR265	0435	256	FSW772048
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VA006	0385	352	FSW782578
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VP243	0408	509	FSW792595
VY344	0067	489	FSW792606
WB026	0390	223	
WM198	0386	180	FSW762239
WM198	0216	404	FSW782546
WM198	0415	486	FSW792526
WM222	0449	401	FSW782548
WS291	0174	140	FSW762213
WS291	0174	165	FSW762213
WS307	0325	163	FSW762310
ZK178	0322	593	FSW802565
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